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ABSTRACT

Twenty more effective and twenty less effective teachers were studied to determine if they differed in the ways they plan for instruction. The effectiveness of the teachers was determined by their ability to affect gains in reading and mathematics over two weeks of instruction with a specially designed curriculum unit. Four variables were noted as distinguishing between the planning of the more and less effective teachers. There were: (a) whether the teacher used specific or general information in planning; (b) whether the teacher believed students had the potential to learn the material; (c) whether the teacher considered the cognitive aspects of instruction; and (d) whether the teacher produced much of his or her own instructional materials. When the findings of this study were compared to the findings of a coordinated study of teacher and pupil perceptions of classroom interaction, two of the variables were found to be important in both teacher planning and classroom interaction. These two were teacher tendency to think in generalities rather than specifics, and teacher attention to cognitive aspects of lessons. (Author/JD)

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BEGINNING TEACHER EVALUATION STUDY

Technical Report Series

Special Study C

A STUDY OF TEACHER PLANNING

by

Greta Morine

March 15, 1976

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Special Study C

A STUDY OF TEACHER PLANNING

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ABSTRACT

This study of teacher planning was designed to generate promising new variables for further study of teacher effectiveness. It was conducted in conjunction with a study of teacher and pupil perceptions of classroom interaction. Twenty second grade and 20 fifth grade teachers were selected from a group of two hundred volunteer teachers around the State of California. They were selected to provide variation in average pupil gain scores after a two-week period of instruction with Experimental Teaching Units in reading and mathematics.

Each of the 40 teachers planned and taught a lesson in reading and a lesson in math to a stratified sample of pupils from their own classroom. After each lesson teachers were interviewed and presented with a series of tasks related to their information processing in both preactive and interactive settings. A month later the 40 teachers met in groups to carry out two simulation tasks. In one task teachers viewed a videotape of pupils reading aloud, and diagnosed the pupils' reading difficulties. In the other task teachers were asked to plan a reading program for a new class of pupils on the basis of information about the pupils contained in a data bank of written records. Teachers were provided with any information they requested from the data bank, but they received only the information that they requested.

Teacher responses were analyzed to identify similarities and differences between second and fifth grade teachers, and between teachers with high and low average pupil gain scores on the Experimental Teaching Units. Patterns of responses of second and fifth grade teachers were

described, but no statistical analysis was made. Several statistically significant differences between second grade teachers of high and low pupil gain scores were found. A few statistically significant differences between fifth grade teachers of high and low pupil gain scores were found.

On the basis of the significant findings and of other non-significant, but interesting trends that were identified, four teacher planning variables were suggested for further study. These were: teacher processing of specific vs. general information; teacher perspectives that emphasize pupil potential for change; teacher attention to cognitive considerations and instructional process; teacher production and use of instructional materials.

When findings of the teacher planning study were related to findings of the study of teacher and pupil perceptions of classroom interaction, two variables were found to have significant differences in both teacher planning and teacher perceptions of classroom interaction. The variables were teacher tendency to think in generalities, which was related to low pupil gain scores, and teacher attention to cognitive aspects of lessons, which was which was related to high pupil gain scores. These two variables were highly recommended for further study of teacher effectiveness.

CHAPTER ONE

Introduction

Planning ahead is one of the basic virtues in the American culture. Our folk wisdom is replete with homilies such as, "A stitch in time saves nine," and "Look before you leap." Boy Scouts and Girl Scouts alike learn the motto, "Be Prepared." Aesop's Fables extols the industrious far-sighted ants and denigrates the hedonistic, thoughtless grasshopper. We are surrounded with suggestions that the hallmark of wisdom is planning for the future.

On the other hand, of course, we are prodded with reminders that plans do not always carry the day. "Don't count your chickens before they're hatched," we warn each other. And "the best laid plans of mice and men gang aft aglee." Any understanding of the tenuousness and unpredictability of the future is also a characteristic of the wise person.

These attitudes have pervaded our society for years, so it is hardly surprising that they have pervaded American education as well. It has long been assumed that one of the most important aspects of teacher training is training in how to plan. The virtue of planning as an enterprise has been so accepted, that hardly anyone has stopped to ask what difference it makes whether a teacher plans or not. In fact it is only recently that we have bothered to ask how teachers plan, how they state their goals, how they project and shape classroom events, or how willing they are to abandon their "best laid plans" when they begin to "gang aglee."

This study grows out of the belief that teacher planning is important. After all, who are we to discard the traditional American virtues lightly? But there is a corollary belief underlying this study: We need to know much, much more about teacher planning. The responses of teachers to our questions about their planning have served to confirm that belief, and the variations in planning procedures that we have unearthed suggest that planning is a complex phenomenon.

We have attempted in a preliminary way to gather information on what teachers think about as they plan for daily lessons and for long-range instructional programs. The information presented here seems fairly obvious in some instances, and rather puzzling in others. There is little doubt that much more information is there to be gathered, if we can find the appropriate means. Unquestionably, there are further questions to be asked about teacher planning and its relation to teacher effectiveness. This report will delineate the findings that suggest what some of these important questions may be.

Objectives of the Study

The specific goals of this study of teacher planning (Special Study C) are:

1. to document in a preliminary way the kinds of planning that teachers engage in before a lesson begins.
2. to study teacher thinking about evaluation and modification of a lesson that has just been completed, and teacher decisions about how to proceed with a subsequent lesson.
3. to identify the cues used by teachers in diagnostic activities related to short-term and long-term planning of reading instruction.

Although teacher planning would seem to be an important aspect of effective teaching, our literature review indicates that very little study of teacher planning has actually been done. Since planning goes on in teachers' heads, it is not a simple thing to observe. The exploratory nature of the present study of teacher planning is elaborated in the literature review section of this report. The state of affairs with regard to research on teacher planning has led us to state rather cautious goals for this study.

We know that most teachers do plan, but we are convinced from our own experiences as teachers, and our observations of colleagues, that this planning takes many forms. The day to day planning is different from making written plans for a substitute to take over a class, or planning a lesson that the principal will observe. As a preliminary approach to the question of how teachers plan, we studied the form and content of teachers' written plans for lessons that would be taught in "pressure" situations. We expected that these plans would be more detailed than teachers' normal daily plans. In other words, we believed that this kind of situation would get more ideas out of teachers heads and into a form where they could be observed and analyzed. It was hoped that the form and content of teacher plans would provide clues to additional variables that might be related to teaching effectiveness.

We assume that teachers can learn from reflecting upon experience, and it seems possible that this type of learning could be related to teaching effectiveness. That is, teachers who reflect more on their teaching may learn more about teaching; by incorporating these deliberations into their planning activities, they may therefore improve their teaching more rapidly. Reflection on a lesson one has just taught might lead in two different directions. A teacher might "look back" and think about how to teach the same lesson differently on another occasion, or (s)he might "look ahead" and think about how to move from that lesson to the succeeding one. Information on teacher willingness to reflect on a lesson just taught, and on teacher preference in type of reflection (looking back vs. looking ahead) might, therefore, provide some clues to teacher planning variables that warrant further investigation.

Educators have tended to assume that teachers learn from vicarious experience, that is, from observation and selective imitation of the procedures of other teachers. We wanted to know more about how observation of variation in teaching affects teachers' ability to generate alternative procedures for their own future lessons. We hoped that information on teacher response to observations of the lesson variations of other teachers might illuminate an important aspect of teacher planning.

Teachers' diagnosis of pupils' abilities and needs is one very important part of teacher planning. We planned to examine two basic kinds of diagnosis: diagnosis leading to long-term decisions (such as formation of reading groups for the year), and diagnosis leading to short-term decisions (such as who needs further instruction on the "ch" blend). We wanted to know more about the types and amounts of information that teachers use in making these two different types of diagnoses.

We were also interested in whether the process of teacher diagnosis in preactive settings (planning) differs from diagnosis in interactive settings (teaching a lesson). The terms "preactive" and "interactive" were coined by Philip Jackson (1965) on the supposition that teacher thinking differs greatly in these two situations. Although the distinction is theoretically powerful, we know of no evidence to substantiate the supposition. By combining this study with a study of teacher and pupil perceptions of classroom interaction (Special Study B), we have been able to compare the types of information about classroom instruction that were salient to teachers and pupils (Special Study B) with the types of information teachers considered in making planning decisions (Special Study C).

The basic questions that have been asked in this study are:

1. What types of things do teachers make notes about when planning for a particular lesson? How extensive are their notes? Can teachers be differentiated on this basis? If so, are these differences related to teacher differences in average pupil gain score?

2. What types of information do teachers use in thinking about revising or extending a lesson that they have taught? Can teachers be differentiated on the types and amounts of information used in these situations? When reviewing lessons, do teachers differ in their preference for revising (looking back) or extending (looking ahead)? If so, are these differences related to teacher differences in average pupil gain score?

3. When teachers view variations in the lessons of other teachers, does this tend to stimulate or inhibit them in generating additional instructional alternatives for dealing with the same content? Can teachers be differentiated on this basis? If so, are these differences related to differences in average pupil gain score?

4. What types and amounts of information do teachers seek in making long-term diagnoses about a new (in this case simulated) group of pupils? How do teachers combine various types of information to develop perceptions of particular pupils? Can teachers be differentiated on this basis? If so, are these differences related to teacher differences in average pupil gain score?

5. How specific are teacher short-term diagnoses of reading problems with a new (simulated) group of pupils? What additional types of information do teachers seek? Can teachers be differentiated on this basis? If so, are these differences related to grade level or average pupil gain score?

6. Do teachers use information differently in interactive and preactive settings? (This question is to be addressed by combining the findings of Special Studies B and C).

7. What new research variables are suggested by this information about teacher planning?

CHAPTER TWO

Literature Review

There is a startling lack of research literature on the subject of teacher planning, or decision-making in the preactive (Jackson, 1965) phase of teaching. The topic is not without discussants and has received some attention in the literature on teacher effectiveness, but surprisingly little of this attention has been research-oriented. For this reason it is difficult to formulate any systematic argument for what teacher planning actually includes or for what it focuses on. The literature, for the most part, leaves the question open. This brief paper reviews the kinds of concerns addressed by the writings on teacher planning and suggests some of the more promising research directions that are implied by them.

Research and Argument on Teacher Planning

The area impinging on teacher planning which has been the most researched is the domain of educational decision-making. While the major focus in this area has tended to be on the processes of instructional decision-making in interactive classroom situations and on the contexts in which such decisions are made (see Joyce and Weil, 1972; Joyce, 1969; and the literature review in Morine and Vallance, 1975), some research does refer to decision-making in the preactive phase. Little of this, however, gives any clues as to how teachers plan specifically for the use of instructional materials and for the instructional process itself. As Zahorik (1975) points out, "the topic of planning for teaching has mainly been dealt with on the prescriptive level" (p.1), attending more to idealized models and recommendations than to how teachers actually prepare for lessons.

Smith and Geoffrey's (1968) micro-ethnographic study of classroom life described preactive decision making mostly as a concern with establishing the social system of the classroom. Kounin (1970) also found that the social dimension of classroom life was in the teacher's thought at least as much as the activity structure and curriculum, though he did not study decision-making as such. Morine (1973) argues that teacher planning may not be the deliberate problem-solving activity that many have assumed it to be, and that it is more typically a routine activity of recording the pages to be covered -- that practice teaching is often not truly instructional "planning" at all.

The importance of developing planning skills has been strongly argued by Hunt (1970) and Morine (1973), and planning skills have been incorporated into numerous teacher-training systems or proposals for same (Morine, 1973; Taba, 1966). But there is little research to support the basic notion that improved planning for instruction will improve the quality of teaching that ensues. In fact, in the one empirical study we were able to locate, the effects of planning were negative. Zahorik (1970) noted that teachers who planned, in comparison to those who did not, when teaching the same lesson, more frequently "summarized pupils' responses, repeated original solicitations, and tried to shape pupils' responses to reflect the teacher's views." In Zahorik's evaluation, teachers who planned exhibited less honest, or authentic, use of pupils' ideas.

Training materials for teaching planning skills typically stress the formation of behavioral objectives (Joyce et. al, 1971), but curricula vary widely in the latitude given to teachers in establishing goals (Joyce, 1969) and many of the new curricula developed during the 1960's are of a highly prescriptive nature (Goodlad, 1966). Possibly as a result of this, but possibly for other reasons as well, many teachers depend on the curriculum that they are working with to guide them, and have little personal experience in making decisions about goals.

Most of the work on planning to date has focused on the objectives/learning activities/organization of activities/ evaluation model developed two decades ago by Tyler (1950) and adapted by Taba (1962), by Popham (1970) and by most proponents of behavioral objectives. But Popham and his associates (Popham and Baker, 1970) have found that without specific training in writing objectives, few teachers develop behavioral objectives that are closely tied to either instructional or evaluative activity. Despite the stress on objectives in training for planning, however, in practice most teachers resist stating behavioral objectives.

There is relatively little evidence indicating that teachers do work from pre-established goals or what the effect of this kind of planning might be (Crist, Marx, and Peterson, 1974). The literature on behavioral objectives is heavily laden with argumentation and debate (see Popham, Eisner, Sullivan, and Tyler, 1969), but research on the relationship between goal-setting and student outcomes is far from conclusive.

More fruitful perhaps than the objectives-outcomes line of research is another direction which seeks to understand simply what teachers do when they prepare for class. Jackson's (1965) description of preactive teaching suggests some of the components of this activity, though his formulation includes such non-specifically-planning activities as arranging the bulletin board and cleaning erasers. More interesting from a decision-making standpoint is Shulman's technique for inferring the hypotheses and tentative decisions made by physicians, by mapping the questions they ask and the kinds of information they seek (laboratory tests, x-rays, etc.) Shulman and Elstein (1975) review a wide body of research on judgment and decision-making in fields requiring considerable processing of information outside of education, including not only medicine but banking investments, chess, and agriculture. They emphasize the importance of various kinds of simulation techniques in research they call "process-tracing" (following the decision process directly, rather than the "black box" method of drawing inferences from analyzing input and output). Simulation exercises using "in-basket" types of information assortments have been effectively applied to studying decision-making among administrators, for example, and "programmed patients" have been used as the source of cues to study physicians' use of information. Most of these techniques, however, refer to practical problem-solving decisions that must be made on particular courses of action, and do not apply directly to the routine and replicable planning of activity aimed at communicating content to groups of children. Shulman warns (personal communication) that education lacks the clear "symptom groupings" and other established paradigms that allow physicians to quickly see patterns and estimate what additional information they do need, but he identifies some important similarities in physicians' and teachers' diagnostic processes. As Crist et al. (1974) and Shulman himself argue, the possibility of making inferences about decision-making from the information teachers use and the hypotheses they form is intriguing (see the literature review and results in Morine and Vallance, 1975). The applications of this to preactive planning (and especially to long-term planning) remain to be worked out.

Crist et al. (1974) and Marx and Peterson (1975) working with Joyce at Stanford, have developed a technique for recording directly what teachers consider when planning a lesson in which they will work with unfamiliar materials. The technique they use is a "talk-aloud" process of having the teacher talk into a tape recorder to record everything he or she is thinking about while planning the teaching of a new unit to a small group of selected students (also new to the teacher). This talk-aloud technique is intended to provide a naturalistic description (not prompted by interview questions or the structure of a checklist) of the decisions teachers believe they are making. The resulting transcribed protocols are then coded according to the various categories of information referred to.

The talk-aloud technique has been the most direct tool currently available for describing what teachers do when they plan, and it may prove to be quite valuable. There are some important problems associated with it, however, and they raise questions pertinent to further research in the area. The most critical problem is the difficulty of ensuring that the teachers do in fact verbalize the really important planning information. An early version of that study indicated wide variations in the talkativeness of the teachers -- some teachers produced detailed protocols, but at least one teacher was silent during the whole planning period. (Do teachers who plan more effectively verbalize the process better, or vice versa? What kinds of planning decisions tend not to be verbalized, or is there any consistency in the verbalization patterns?) Results from the full 1975 study showed that the "productivity," or sheer frequency of decisions reported, varied in different teachers according to whether the decisions referred to preactive (planning) decisions or to interactive teaching decisions. That is, "teachers who respond well in one mode do not respond productively in the other" (Marx and Peterson, 1975; p. 9); their verbalization and articulateness about planning decisions may in fact be relatively unrelated to their general perceptiveness about their own teaching. This difference may, as Marx and Peterson suggest, be associated with a difference in style of decision-making: while teachers vary in the number of planning decisions they are aware of, a low score in this mode does not necessarily indicate a low awareness of teaching decisions in general. The significance of a teacher's style in planning decisions must therefore always be assessed against that teacher's sensitivity to the interactive teaching decisions he/she may make. A teacher who is low on both may in fact be generally less aware of his/her behavior than is a teacher who is high on both, but teachers who respond differently in the two modes cannot be easily categorized.

A second difficulty with the technique used by the Stanford group is in the nature of the coding procedure itself; it is, it should be noted, a difficulty faced by all studies -- including the present one -- which demand a reduction of data into systematic categories. That is, the coding system used in that study reflects the kind of idealized "prescriptive" or "ends-means" model (Zahorik, 1975) of planning which dominates most of the research in this area. To refer to decision categories such as Objectives, Materials, Activities, Subject Matter, and Process (as the Marx and Peterson 1975 study does) is to presume that those categories of the teaching process link up in some logical or consistent way -- it is a relatively linear means-ends approach to understanding teaching. It is an approach which is appropriate in many cases. The problem is that these categories may not necessarily correspond to how the teacher himself or herself sees the situation. One teacher, for example, may differentiate his/her planning decisions primarily on a pupil/process dimension, and another may stress a cognitive/affective perspective; the structure of a coding system based on a means-end model would not capture the flavor or style of either of these. How can we be sure, then, that the information categories we are talking about really define the phenomenon? How close can we come to describing the planning process in the terms in which teachers see it?

A third aspect of the Stanford study which merits attention here is the nature of the teaching situation which the teachers were describing. That study stipulated that the teaching be done in a laboratory setting (not the teachers' own schools), with pupils the teachers had not met before, and planning was scheduled for the 90 minutes preceding the lesson. Thus, the study does not suggest how teachers might plan for teaching material they already know, to students they already know, in classroom settings with the usual (and familiar) resources and distractions.

Zahorik's (1975) study of teachers' planning decisions was stimulated in part by critical work (Eisner, 1976; Macdonald, 1965) questioning the practical efficacy of behavioral objectives and of the means-end model of instructional decision-making. Zahorik postulated that teachers' decisions do not always follow logically from a specification of objectives.

His study was designed to identify the kinds of decisions teachers actually make in planning as well as those kinds of decisions which are usually made first in preparing for class sessions. He found that the kind of decision used by the greatest number of teachers (both elementary and secondary) concerned pupil activities: 81% of teachers' plans included this. The decision which teachers most frequently made first pertained not to objectives but to the content to be covered: 51% of teachers put content decisions first; objectives were substantially second to this, at 28%. Zahorik's results are not particularly surprising. It makes sense that teachers would stress pupil activities in planning, and that content would be a major consideration. An important limitation of his study, for the purposes of the present study, is that his teachers' responses referred to their teaching in general and not to their preparation for specific lessons. He does not tell us the kinds of things teachers deal with in planning specific lessons for their own pupils.

The teacher-training literature and programs in teacher training refer frequently to the planning procedures related to longer-term "styles" of teaching (Joyce and Weil, 1972; Morine, 1974) but there is little empirical research demonstrating the actual effects of different long-term planning procedures or describing what teachers normally do when planning for large blocks of time. None of the material examined so far has been helpful in illuminating a distinction which is critical to the present research, namely the characteristics of (and possible differences between) planning for a particular lesson and long-term planning for the teaching of larger units over a period of days or weeks.

Related Research

Some suggestions of ways to identify new and promising variables in teacher planning, and to measure their relationship to teacher effectiveness, derive from research in areas not dealing directly with the question of planning.

One of the most interesting of these is the research on information-processing ability and other dimensions of cognitive style. The thrust of "process ability" research is the identification of the quantity and quality of information used by persons in responding to situations, and identifying process ability (and its components) as a variable in differentiating teaching styles. The research by Schroder, Karlines, and Phares (1970), and the research summarized by them, suggests that teachers may vary in the variety and amount of information that they extract from the environment to apply to instructional decisions. Joyce and Sibol's (1964) research on conceptual flexibility in teachers also found that teachers vary in degree of conceptual flexibility and that this is related to their ability to reform their concepts when additional information is provided. Related to this line of inquiry is "person-perception" research in psychology which has demonstrated the importance of stereotype and of the percipient's own predispositions in making judgments and predictions about other people's abilities and needs. Attribution theory, another area related to information processing, suggests the importance of first impressions in formulating expectations, and tries to describe the process by which expectations may be modified. (The literature on information-processing ability, person-perception research, and attribution theory is reviewed in detail in Morine and Vallance, 1975.)

Questions raised by this whole area of perception and information-processing which relate to teacher planning include the following: How might teachers differ in the quantity and quality of information they utilize in making planning decisions? Would these "breadth" and "depth" scores differentiate among teachers? Would there be differences in amount and kind of information used in planning at different grade levels? for different subject matters? for different kinds of students? Might teachers differ in breadth/depth scores in interactive teaching vs. planning situations? Might some demonstrate great conceptual complexity at the planning stage but be unable to transfer this to interactive teaching? Might effective teachers be those who can transfer from one to the other and are conceptually rich in both? Also, might some teachers be able to enumerate many possible causes of a student's behavior in a reflective (planning or post-teaching evaluation) situation but in fact respond to only one dimension in interactive settings? Do teachers who are conceptually rich in both pre- and interactive teaching see themselves as more effective than teachers who use a great deal of information in planning but are more undimensional in actual teaching?

Some techniques for identifying the kinds of information that teachers use in planning (either for single lessons or long-term), as suggested or implied by process-ability and cognitive-style research, include: 1) having teachers ask questions about new curriculum materials they will be using (and either coding these or asking the teachers to group them into categories); 2) having teachers ask questions that would help them understand a (fictitious) new group of students to whom they would be teaching either an experimental unit or material they are familiar with (again either with coding or a teacher sort of the information); 3) various "sort" techniques (teacher sorts of their own pupils, of classroom characteristics, of characteristics of the instructional materials, etc.) to identify the dimensions of information that are "on teacher's minds" when thinking about the classroom; 4) projection techniques, such as showing a videotape of another teacher teaching (a 4-minute segment, for example) and having teachers list the information they think that teacher used in planning that lesson; 5) having teachers list the information they think would be helpful to a substitute teacher teaching an experimental unit (or a continuation of the regular textbook unit) to their class; and 6) the use of simulation exercises to trace the information teachers use in specified kinds of situations.

Another possible technique for investigating the planning process comes from some work by Joyce and Joyce (1970). These investigators were working with children and developed a way of mapping the information categories used by children in problem-solving by indentifying the items to which children referred when working with a "data bank" of information on a particular topic. In situations varying from unstructured "free inquiry" to more structured directions (e.g., answer a particular question), the investigators were able to identify patterns in the type of information used and variations in the "style" with which students approached the learning task: "Input and output are erratically related. Some students squeeze much output from little input and vice versa. Much work needs to be done to explore precisely what students do with data" (p. 12).

The notion of studying exploration patterns in the use of fixed sets of data seems particularly pertinent to the question of teacher planning;

teachers normally do have standard sets of data which are available to them in planning lessons. These data include the curriculum materials themselves (which the Crist study focused on) but also standard kinds of information about pupils -- information about their past performance, achievement levels, special problems, etc., all normally available in the cumulative file and in the teachers' own records. What do teachers do with these data? Do they use pupil data deliberately in planning single lessons? in long-term planning? If so, how? What patterns are there in the kinds of information used? Do these patterns differentiate among teachers in any systematic way?

Interviews, questionnaires, projective techniques and simulations of data banks on fictitious pupils all are possible methods for studying these questions. Any of these techniques could be useful in identifying the information that teachers refer to when thinking about their teaching outside of the classroom. They would not indicate whether teachers actually use this information in their real classroom planning, but they suggest a starting point for answering some of the questions raised earlier.

Summary of Teacher-Planning Literature

While teacher decision-making at the interactive level has been studied considerably, and many of the components of preactive teaching have been identified, the research literature shows very little on the process of instructional planning or on the kinds of concerns that comprise it. Planning skills have been included in several teacher-training programs, but what teachers actually do when planning or what effect this has on student achievement is virtually uncharted territory. Research on behavioral objectives has not yet offered any conclusive evidence on the relation between teacher goal-setting and student learning.

The most promising line of inquiry in this area is on the question of identifying what teachers do when preparing to teach. "Talk-aloud" planning sessions, analogies to medical diagnostic procedures, and applications of information-processing research in other areas raise the most interesting possibilities for techniques and the most interesting questions about possible variables. These questions are basically the following:

1. What kinds of information (about pupils, about curriculum, about situation) are most salient to teachers when they are "outside" the classroom? What do they notice?
2. What do teachers refer to when working with new material? with new students?
3. Do teachers varying in pupil gain scores consistently use different information (quantity and quality) in planning? Do they differ in how they use the same set of information?
4. Are there differences in the processes of planning for particular lessons and long-term instructional planning? Are there consistent differences between teachers in this respect?

It is these kinds of questions that this study of teacher planning has addressed.

CHAPTER THREE

Design of the Study

This study examines the planning that teachers do in preparing for daily lessons with pupils, and in organizing a long-range instructional program in reading. It was conducted partially in semi-controlled classroom settings, where the number of pupils to be taught, and the curriculum materials to be used, were standard for all teachers. It was also conducted in simulation settings, where teachers' requests for information could be traced and related to their subsequent use of information. A heavy emphasis is placed on the information-processing aspects of teacher planning and diagnosis of pupil needs.

This emphasis has affected the design of the study in one unusual way. It has led to the conceptual union of two studies, which have been conducted in tandem, but are reported separately. This study of teacher planning (Special Study C) has been meshed with a study of teacher and pupil perceptions of classroom interaction (Special Study B).

The questions of how teachers perceive their interactions and how teachers plan are closely related on a logical conceptual level. Largely for this reason, and partly also for reasons of timing and logistics, Special Studies B and C were interrelated also in terms of scheduling, sampling, and data collection. The discussion below briefly describes both the conceptual and the design similarities between the two studies.

The conceptual and logical relationships between the concerns of the two studies is immediately clear when phrased in simple circular terms: Teachers plan their interactions with pupils, their plans affect their perceptions of these interactions, and their perceptions and interpretations of these interactions affect their planning of subsequent interactions. But the interesting connection between the two processes lies in their reliance on a shared body of information. The argument for interrelating the studies stems from the fact that teachers have available for use a certain limited set of data, and they must apply this data to develop guidelines to courses of action in two very different domains. Decision-making in fast-paced interactive situations and decision-making in the quiet and unpressured realm of reflection and planning may be two very different kinds of activity, yet the two processes draw on a shared set of information.

Thus the major hypotheses of the two studies describe different applications of the perceptions of a single set of experiences. Study B hypothesizes that how teachers perceive their students in interactive classroom situations -- the ways teachers categorize pupils, the pupil characteristics and behaviors that are seen as salient, and teachers' own predispositions toward these characteristics and categories -- influence the decisions they make "on their feet" while the information is still coming in. Study C posits that perceptions of these same situations are also used (differentially by different teachers) in making less pressured and more systematic decisions in both short and long-term planning outside the classroom.

The conceptual differences between the concerns of Studies B and C, which argue for their being considered separately despite this congruence, are:

1. While a single set of experiences may provide the basis for decision-making at both levels, interactive and planning decisions may organize these experiences differently. Different perceptions of the same "data" may guide the two processes. It is important to identify how the information is used in each case.

2. Even in cases where the information is organized similarly for both kinds of decision-making, the teacher may actual-

ly react differently to this information in one context than in the other. Also, teachers may differ in their ability to use the same information equally effectively in both planning and classroom situations.

3. It is assumed that information gained through classroom interaction does not constitute the whole of the information used in planning. In less pressured decision-making contexts the teacher can call on other sources of information as well as the immediate behavioral data, and it is important to identify what additional kinds of information are used in planning.

Because of these differences between the studies, the research team collected different kinds of information about teachers' perceptions of a given set of experiences. In particular, in addition to information based on perceptions of the teaching activity itself, Study C calls on information not confined to particular teaching sequences and tries to identify the sources of the more general and more stable perceptions that teachers have of their pupils. But the logical assumption that the same set of experiences contributes to decisions in two very different domains remains the basis of conducting the two studies in parallel.

Since the research team was interested in characterizing teachers in terms of how they use information in both decision-making contexts, the two studies used the same sample of teachers. And the same sample of twelve pupils per teacher was used in the planning-interaction phase of both studies as well. This "match" of teacher and pupil samples allows a comparison of the responses of teachers to the same pupils in each teaching situation. Given this overlap of samples, and given the fact that the studies are concerned with perceptions of the same phenomena, Studies B and C were run simultaneously and were handled jointly by the data collection staff.

Data Collection

A word of introduction is necessary because of the special way in which the procedures for Studies B and C were integrated. There were two different periods of data collection, one an intensive three-week period in March when each teacher was visited, individually, on two different days (once for each 20-minute lesson), and the other a six-day series of group meetings with teachers and pupils in April. All of the teacher data for Study B, concerning teachers' decisions while teaching and their assessments of lessons taught by other teachers, were collected during the three weeks in March. The data on pupils' concepts of teaching, also part of Study B, were all collected during April. Data for Study C on teacher planning were collected during both data-collection phases. Some of the Study C tasks were incorporated into (and were a logical continuation of) the teaching tasks which were the full source of Study B data; the more intensive phases of Study C data collection -- the long and short-term diagnostic simulation tasks -- comprised the six-day phase in April.

In order to describe the data collection procedures as they actually happened, this section breaks down the various procedures according to the order in which they were administered and not according to the specific study of which each was a part. Therefore, this section below is divided into four major parts: orientation; lessons and interviews, which refers to the March data-collection period; diagnostic simulation, the completion of Study C, in April; pupil concepts of teaching, the completion of the pupil portion of Study B. The different tasks of the two studies are assigned within these sections as follows:

A. Orientation - February

B. Lessons and Interviews - March

1. Reading Lesson
    - Lesson Plan (Study C)
    - Teacher Sort Task (Study B)
    - Stimulated Recall Task (Study B)
    - Looking Back/Looking Ahead (Study C)
2. Math Lesson
    - Lesson Plan (Study C)
    - Teacher Sort Task (Study B)
    - Teacher Judgment Task (Study B)
    - Lesson Variation Task (Study C)

C. Diagnostic Simulation (Study C) - April
   1. Diagnostic Simulation (long-term)
   2. Diagnostic Simulation (short-term)

D. Pupil Concepts of Teaching (Study B) - April

Orientation

The 40 teachers selected to participate in this phase of the BTES study were notified by telephone and letter by those in the BTES project who were responsible for identifying the "known sample." Details on selection of this sample are given in the preface and in the following section.

Orientation of the teachers to Special Studies B and C was conducted personally by the members of the research team who would be working with them. The orientation sessions took place during the week preceding the first phase of data collection, and were held in the teachers' own districts. Teachers were oriented in groups of from one to ten, grouped according to their proximity to each other; orientation groups included both second and fifth-grade teachers, and all received the same orientation.

At the orientation sessions, the investigators explained briefly that the 40 teachers had been selected on the basis of their differences in geographic area, teaching styles, and pupil achievement; all had understood from the previous phase of the project that the purpose of the study was to identify characteristics of teaching that would be relevant to teacher training programs. It was explained that each would be asked to prepare and teach two 20-minute lessons, one in reading and one in math, one of which would be videotaped, and that these lessons were unrelated to the Experimental Teaching Units. The instructional materials for these lessons were given to the teachers at this time.

The reading lesson was a short lesson on sentence expansion; the math lesson involved introducing pupils to a mathematical system known as a lattice. The instructional materials included a brief account of what was meant by sentence expansion and of the properties of the lattice; both sets of materials (identical for second- and fifth-grade teachers) included sample problems, a list of sample objectives that could be derived for a lesson, and instructions stressing that teachers should structure the lesson in any way that was appropriate to their teaching styles and their pupils.

Pupil lists were also given to the teachers at this time. These lists identified the 12 pupils (selected randomly from three reading strata that represented the range of reading abilities in their class) who were to participate in the lesson; substitutions necessary due to absences or changes in the class population were made, matching the absentees with other pupils of an equivalent reading-achievement level (high, medium, low). Details on the selection of pupils are given in the next section.

In order not to alert the teachers toward looking for certain things in their own teaching, the individual tasks following each lesson were not spelled out in detail. It was explained that the reading lesson would be videotaped and that the purpose of the tape was primarily to help them remember the lesson as the interviewers asked some questions about it afterwards. Teachers were told that the lattice lesson would be audio-taped only, that after that lesson they would be shown videotapes of other teachers teaching the same content, and that they would be asked some questions about those lessons and the lesson they themselves had taught.

Teachers were also told that one part of the study was designed to see how teachers actually plan for specific lessons. With the instructional materials they were told,

> We are trying to learn what teachers think about in planning or preparing lessons. As you get ready to teach this lesson, please make readable notes about what you expect to do in the lesson -- notes that would help an observer to understand your lesson more completely. These notes will be collected right after you have taught the lesson.

In addition, a written set of questions pertaining to planning was given to all teachers, along with a blank audiotape to be used if they chose to answer these questions orally.

The specific schedule for the data collection phase was worked out during the orientation sessions, with teachers selecting among the time slots available in each of the major geographical areas.

Lessons and Interviews (Studies B and C)

The 40 teachers were spread among five geographical areas: Sacramento, San Jose/Santa Clara, Mt. Diablo, Los Angeles, and Ventura. The four members of the research team were assigned 9 to 12 teachers each, depending on the constraints of geographical proximity and scheduling, and saw each teacher twice over a three-week period in March. One session covered the reading lesson and the Stimulated Recall Task; the other covered the math lesson and the Teacher Judgment Task. The reading lesson was videotaped and for these sessions an assistant accompanied each investigator to handle equipment and assist in observations. The math lesson was recorded on audiotape, and no assistant was present at those sessions. Half of the teachers at each grade level taught the reading lesson first and half taught the math lesson first, thereby balancing the order. In both the reading and the math lessons, teachers taught a 20-minute lesson from simple and relatively unstructured curriculum materials (see Appendix B-I) given to them during orientation one or two weeks previously. They taught in their own classrooms in almost all cases*, teaching to a small group of 12 of their own pupils randomly selected from strata representing the range of reading achievement levels (high, medium, low) present in their classroom. The remaining pupils from the classroom were not present and were under the supervision of a substitute teacher; the 12 pupils later joined the substitute teacher while their own teacher was being interviewed after the lesson. The interview after each lesson took from one to two hours; all interviews were audiotaped. Each interviewer typically saw one teacher in the morning and one in the afternoon. In most cases the afternoon session was completed by the time the dismissal bell rang; aside from the time required to prepare the lesson, this phase of the study demanded almost no out-of-class time on the part of the participating teachers.

Procedures for each teaching session and interview session are described in detail below.

Reading lesson. The reading lesson of each teacher was videotaped using Sony Porta-Pak equipment which was set up during the 15 minutes preceding the lesson, usually with the children already in the room. (In cases where the teacher or pupils requested it, pupils were filmed briefly and the tape replayed to allay curiosity or nervousness; more often the children were shown a few minutes of the replay after the lesson had ended). The teacher determined the physical set-up of the room, and the videotape equipment was adjusted to be able to capture all the pupils as well as the teacher. Usually the teacher had the 12 pupils grouped in the front of the room somehow (around a table, seated in a row, sitting on the floor), though occasionally the pupils would separate for seatwork.

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*A few teachers chose to use other teaching stations, such as the cafeteria or remedial reading room.

The teacher signaled when he or she was ready to begin the lesson. Lessons were planned for 20 minutes but were videotaped up to 30 minutes if they continued that long. There was one camera person, who panned from teacher to pupils in order to follow interactions and included both close-up and distance shots. At the conclusion of the lesson the pupils were given a short test designed to measure pupil self-perception regarding their behavior in the specific lesson and in reading lessons in general. They were then sent to join the rest of the class. Teacher and interviewer then moved to a quiet room where an audiotape recorder and the videotape system were set up. The interview was audiotaped, and had three main parts, as follows:

1. Teacher Sort Task (Study B). Names of the pupils were written on separate index cards. After a brief introduction to the interview, in which the interviewer explained the format of the interview and urged the teacher to ask questions at any time, the interviewer introduced the Teacher Sort Task as follows:

> We're interested in the kinds of things that you noticed about pupils in the lesson you just taught. Could you take these cards and group the pupils, putting together the names of pupils that you think behaved or responded in similar ways during the lesson? You can have as many groups as you like,

> and as many names in a group as you like. You might even have a group of pupil that really didn't attract your attention very much during the lesson. I will be audiotaping your comments so that I don't have to bother taking notes. Any questions?

Clues were not provided and the teacher was not prompted in any way; directions were repeated as necessary for clarification.

After each sort the teacher was asked the following questions:

a. How are the children in each group similar? Please describe each group's characteristics. (Please provide a descriptive phrase.)

b. How are the sub-groups different from each other?

c. Can you think of another way that you might divide pupils into sub-groups? Are there some other kinds of behavior that you noticed? Try putting them together in a different way.

Teachers were encouraged to re-sort the pupils as often and on as many different bases as they thought appropriate. The interviewer diagrammed each sort on paper, listing the pupil grouping, the descriptions of each grouping, and the label which the teacher gave to each full sort (e.g. "Participation", or "performance in expanding the sentences").

When the teacher had finished the last sort, the interviewer asked, "Were there any pupils that acted differently than usual today? If so, who? How were they different?"

2. Stimulated Recall Task (Study B). The interviewer introduced this task at the completion of the Teacher Sort Task, as follows:

> We're interested in what you were thinking while you were teaching this lesson -- especially what you were thinking as you decided what to do next at various points in the lesson. As we play the lesson back, please tell me to stop the tape whenever we reach a point where you were consciously saying to yourself, "let's see, I think I'd better do this now," or "I guess I'll try doing this." I may stop the tape myself at a couple of points, but you should tell me to stop it whenever there is a point in the lesson where you know you made a specific decision about what to do next in the lesson. Questions?

The videotape recorder and small monitor were within reach of the interviewer, who stopped and started the tape herself as the teacher identified decision points. If the teacher did not stop the tape the first time a pupil gave an incorrect answer to a question and the second time there was a shift in pupil activity, the interviewer was instructed to stop the tape at those two points; on all occasions where the tape was stopped (by teacher or interviewer), the teacher was asked the following questions:

a. What were you thinking at that point?

b. What did you notice that made you sort of stop and think? (If necessary, add: Was there anything pupils were doing that made you sort of stop and think?)

c. What did you decide to do?

d. Was there anything else you thought of doing at that point, but decided against?

e. What was it?

Teachers were encouraged to stop and discuss their decisions as often as they liked.

At the end of the playback, the interviewer said:

> We've talked about several different decisions that you made during this lesson. Are there two or three that you think were particularly important for the success of the lesson? Which ones were they?

3. Looking Back/Looking Ahead (Study C). This task, properly a part of Study C, was a continuation of the Stimulated Recall Task, requiring teachers to reflect briefly on their own performance during the lesson. In introducing this task, the interviewer said,

> Now I'd like to ask you a few more questions regarding the lesson you just taught. I'd like to know more about how you evaluate this lesson and any modifications you might plan. Think about the responses of your students to the questions you asked (If there was written work, add: Take a few minutes please to look over these papers).

After a pause, the following four questions were asked (responses, again, were audiotaped):

a. If you were planning to teach this lesson to another similar group of pupils, would you change your plans in any way?

    1. What changes would you make?
    2. Why?

b. If you were going to continue teaching this topic to the same group of pupils, what would you plan to do in the next lesson?

    1. Why?

c. We've talked about teaching this lesson again to another group, and teaching a follow-up lesson to the same group.

    1. Do you normally think about any of those possibilities right after you've finished teaching a lesson?
    2. What do you usually think about after you've taught a lesson?

d. When you were planning this lesson, did you consider more than one way of doing it, before you settled on the procedure you used?

(Either before or at the conclusion of the interview, the interviewer collected the teacher's lesson plan and the written or audiotaped responses to the planning questions).

The whole interview, from the Teacher Sort Task through the last question, took about an hour, though occasionally it ran longer, depending on the length of the lesson taught and the number of times the teacher stopped the videotape. In every case the entire lesson was reviewed.

Math lesson. Math lessons were audiotaped on a cassette recorder which was set up immediately before the lesson started. Again, the teacher decided the physical setting; lessons were about 20 minutes long. The interviewer sat in an inconspicuous position behind the group of pupils, taking notes on the seating arrangement for later reference. As with the reading lesson, pupils were given a brief self-perception inventory, after the lesson, then sent to rejoin the rest of their class, while teacher and interviewer adjourned to a quiet room for the interview. The interview was audiotaped, and had three main parts, as follows:

1. Teacher Sort Task (Study B). Instructions and procedures for the Teacher Sort Task were identical to those described in the foregoing section.

2. Teacher Judgment Task (Study B). The Teacher Judgment Task provided an opportunity for teachers to view other teachers teaching the same kind of content that they themselves had just taught, in lessons dealing with a mathematical lattice (see Appendix B-I). A videotape was shown to the teachers, presenting segments of five different lattice lessons, taught to small groups of pupils from grades two, four and five.

The lessons were varied in a number of different ways. In Lesson One a group of fifth graders "invented" their own problems, while the teacher wrote them on the board, organizing them according to type of operation. The teacher accepted all pupil ideas. In Lesson Two a group of second graders also invented their own problems, but they themselves drew arrows on a large chart in order to show their problems to the rest of the class. The teacher frequently redrew these arrows to make them larger or straighter. In Lesson Three the teacher used an inductive discovery method to lead a group of fourth grade students to realize that alternating arrows cancelled each other. Series of similar problems were written on the board. When pupils made an error the problem was "saved" for them to answer later, and the teacher wrote the pupil's initial next to the problem as a reminder. In Lesson Four a second grade group used individual worksheets to draw arrows and find answers to problems posed verbally by the teacher. The teacher held a large paper arrow and demonstrated problems with this arrow and a number chart. No problems were written down. This teacher used a great deal of positive reinforcement. When a pupil gave an incorrect answer other pupils were invited to help in arriving at the correct answer. In Lesson Five a fifth grade group worked individually to place a geometric figure on a lattice according to a "code" (problem) that described the figure and its placement. When a pupil had difficulty the teacher gave additonal directions so that the pupil could solve the problem alone.

Content focus of the lessons varied as well. Lessons One and Three dealt with the mathematical properties of the lattice (what operations were possible; how reciprocal operations functioned). Lessons Two and Four focused on the numerical value of the arrows (↑= +10, ↓= -10). Lesson Five presented the lattice as an arrangement in space, and related it to geometry.

The task of viewing these tapes was introduced to teachers as follows:

> I'd like to now show some short sequences of other teachers teaching a lattice lesson. In each case, this is the first time the teacher has introduced lattice work to the students shown. I will just be showing you short excerpts rather than an entire 20 minute lesson. After each of the sequences, which are about 5 minutes in length, I will ask you a few questions regarding what you have observed this other teacher doing, and particularly, what differences you see between the various lessons. Again, I will tape your answers to save my taking notes. Any questions?

After each sequence the interviewer stopped the tape and asked the following questions:

a. What do you notice about this teacher's general approach to the lattice lesson?

b. Which specific teaching procedures in this lesson seem particularly appropriate to you?

c. Were there any specific teaching procedures in this lesson that seemed inappropriate to you? Why?

After all sequences had been observed and commented upon in this manner, the interviewer asked the following questions:

a. Now that you've seen several variations of the lattice lesson, do you have any preferences?
    1. Was there one lesson that seemed more interesting or more successful to you than the others?
    2. If so, why?

b. Did you notice any differences in the way the various teachers reacted to pupil errors?
    1. What were they?
    2. Did any of these methods of responding seem more appropriate to you than any others? Why?

c. Did you notice any differences in the way the various teachers personalized the lesson or seemed to deal with pupil feelings?
    1. What were they?
    2. Did any of these methods seem more appropriate to you than others? Why?

3. Lesson Variation (Study C). The Lesson Variation Task, properly a part of Study C, was a continuation of the Teacher Judgment Task and was designed to allow teachers to reflect on their own lattice lesson after having seen others. The questions asked during this part of the interview were the following:

a. You have seen several different variations on the lattice lesson. Can you think of some other different approaches that might be interesting to try? (Probe for more)

b. You've suggested one (or several) additional variations on the lattice lesson. How do you think pupil responses to this (these) approaches might differ from pupil responses to your lesson? ... from pupil responses to the lessons you saw on the tape?

c. If you were going to teach the lattice lesson again to another similar group of pupils. What changes would you make in the lesson?

d. We asked you to teach a 20-minute lesson on the lattice to 12 students who were varied in ability, so we set quite a few limits on the way you might proceed. If you were going to teach a math lesson without any of those restrictions, how would you structure the lesson?

Altogether the interview following the math lattice lesson took about an hour.

Diagnostic Simulation (Study C). The second phase of data collection for the teacher planning study (Study C) took place over a period of six days and began two weeks after Phase I was completed. Data collection was done in workshop-style sessions lasting one full day each, with teachers meeting in groups of from four to ten depending on geographical proximity. In these sessions the researchers worked together as a team with each group of teachers. A full day was spent with each of the following groups: Sacramento (4), Mt. Diablo (7), San Jose/Santa Clara (7), and Ventura (10). Los Angeles teachers were divided into two day-long sessions, with 6 teachers in each session.

The planning study actually included five tasks, the first three of which (teachers' written lesson plans and answers to questions, the Looking Back/Looking Ahead and Lesson Variation Tasks), were incorporated into the data collection procedures reported under the lesson-interview phase. The day-long sessions referred to in this section covered the fourth and fifth tasks. These are referred to as diagnostic simulation for long-term and short-term planning, respectively.

1. Diagnostic simulation (long-term). The long-range planning task was a simulation exercise designed to identify the kinds of information

teachers consider important in planning a program for a year. This task was administered in the morning session and took about 3½ hours.

Materials for this task were:

A. Four complete sets of "data banks" or cumulative school records on fourteen real children who were unfamiliar to the teachers. Separate information folders included data for either 2nd or 5th grade levels on health and attendance, family background, teachers' comments, parent conferences, report card records, psychological reports, remedial reading reports, and the like. Second grade teachers received this type of cumulative record information covering the kindergarten and first grade performance of the children. Fifth grade teachers received information covering kindergarten through fourth grade. Not every type of information was available on all pupils because, as in real school settings, some children had transferred late and had incomplete files.

B. A set of blank index cards for each teacher.

C. A pad of paper and pens.

After the initial greeting and introduction of the teachers to each other, the task was introduced as follows:

> We are interested in knowing more about how teachers decide to organize their reading program for the year. This task "simulates" the conditions of the opening of school.
> You have been assigned a new group of pupils for the year.
> You must decide how to organize your reading program. You have available to you a variety of information on these pupils but you must specify each item or type of information that you want.
> What do you want to know about these pupils? Write your questions on the 3 X 5 cards you have been given -- one question per card. Give the cards to the data bank "assistant." She will give you the information you have requested. You can come back later for more information if you wish.
> You have three hours for this task. At the end of that time you should have completed:

> a. a brief description of your reading program referring to: who will be using what materials; your reasons for these assignments; the general objectives and types of activities for the year;
>
> b. a "thumb nail sketch" of each student, describing the important things you learned about him or her.
>
> In order to simplify this task, there are only fourteen students for you to think about. But you should make your plans as if these students are representative, and are only half of the class that you will be teaching.

Teachers were not told what information was available because it was important to record each teacher's individual decision as to what information was necessary or desirable. The interviewers numbered teachers' requests in the order in which they were made. Requests for information not available in the data bank were numbered and acknowledged and in these cases teachers were simply told that the files did not include that information and were encouraged to think of other data they might use. As each request was made, the appropriate folder was given to the teacher; because there were only 4 data banks for each grade level, teachers occasionally had to share a folder or wait until another teacher had finished with it, but this did not happen frequently, and did not seem to present a difficulty. The first twenty minutes or so of the "data-bank" task was usually fairly busy while teachers requested particular files and interviewers met the requests. After this, teachers worked on the pupil descriptions and the description of the reading program for about two to two-and-one-half hours, with only occasional new requests for folders occurring during this period.

As each teacher completed the task, he or she met and talked briefly with one of the interviewers. This discussion was designed to determine how closely the simulation task approximated teachers' actual planning procedures. The interview was tape recorded, and included the following four questions:

a. This was a simulation task, so we know it was somewhat different from the real planning you do at the beginning of the year. What do you think are the most important differences between what you did here today and what you do normally to prepare for a new class?

b. How would you characterize your reading instruction? Do you work with the whole class, or group, or individualize, or use some combination of those?

c. Suppose someone came in to observe your reading lessons this week, and then came back again in two months, what things might they see that would be similar, and what things might be different?

d. What types of reading materials does your school have available? Which of those do you find most useful? Do you use any special materials, that aren't supplied normally by the school?

This interview was short, usually fifteen minutes; the descriptions of the reading program and of the pupils were collected at this time.

After each teacher had been individually interviewed, one of the interviewers then conducted a group discussion among all of them, designed primarily to enable teachers to share information with each other.

The major questions that guided the discussion were:

a. What other teachers or staff members in your district do you talk to or share information or materials with in planning for instruction?

b. How often do you have an opportunity to observe other teachers at work? How is this managed at your school? What are the advantages and disadvantages of such observations?

c. What do you think are the most important differences between the simulated task you did here today and what you do normally to prepare for a new class? (You've answered this individually. Now let's share our responses.)

d. How would you characterize your reading instruction? Do you work with the whole class, or group, or individualize, or use some combination of those? (you answered this question individually, too. We thought you might be interested in seeing how much variety exists in the group.)

e. Have you made any changes in teaching reading with this year's class compared to last year's class?

The group discussion usually ran at least a half hour, and sometimes as long as an hour. Teachers were eager to exchange notes and learn of each other's experiences, and the length of the discussion varied with the size and general mood of the group.

2. Diagnostic simulation (short-term). The short-term diagnostic task took place in the afternoon. It consisted of having teachers watch four segments of a videotape produced by Educational Testing Service in an earlier phase of the Beginning Teacher Evaluation Study, designed to assess teachers' skills in diagnosing reading problems. Each of the four segments showed one child reading a brief passage. Two of the children were reading word lists; the other two were reading a paragraph and were asked a few questions to test their comprehension. Each teacher had copies of the word lists and paragraphs, and could follow along as the child read, (see Appendix B-III). Several teachers complained that the sound quality of the tape was poor, and each segment was replayed once if teachers so requested. After each segment of the tape, the tape was stopped and teachers were given seven minutes to answer a set of written questions about what they had first seen. All teachers in both grade levels saw the same tape.

Pupil concepts of teaching (Study B.) During a two-week period in April, at the same time that the diagnostic simulation phase of the study was conducted with teachers, pupils were interviewed in small groups to gather information about their concepts of teaching. The pupils who participated in this activity were drawn only from the Bay Area schools included in this study (Mt. Diablo, San Jose, and Santa Clara). The twelve pupils who had been involved in the reading and math lessons for each of the fourteen Bay Area classrooms (168 pupils in all) were divided into low, medium, and high groups based on the range of reading achievement test scores for the total sample, not the individual classroom. At each grade level (2nd and 5th) pupils were randomly selected from these pooled groups to form six groups of four students each. (Further details are included in the section on Subjects). Each group included pupils from more than one school district. Two of the groups thus formed included two pupils from the same classroom.

Each of the pupil groups spent a day together at a central location. Four groups met at the Far West Laboratory and two met at a school in Santa Clara. Transportation was provided by parents and by Laboratory staff members. Each of the six pupil groups engaged in the same set of activities. All pupil interviews were conducted by the director of the research team, who has had ten years experience teaching elementary school children.

Pupils were told that their classroom teachers were participating in a study to learn more about teaching, and that the research team wanted to know what pupils thought about the ways teachers helped them to learn. The group interviews were conducted in four parts, with breaks for exercise, snacks, and lunch between each part.

Part one: General observations of teaching. Pupils were asked what things their teachers, or other teachers they had known previously, did that helped them learn. Their responses were written down on large sheets of white paper, which were hung on the walls as they were completed. Probing questions were asked where necessary to clarify ideas. All pupils were encouraged to participate in the discussion, and each idea that was recorded was initialled, so that pupils could identify which ideas they had personally contributed.

Periodically, the interviewer asked, "What other kinds of things can you think of that teachers do to help you learn?" There was no time limit. Each discussion went on until pupils began to run out of additonal ideas.

Part Two: Participant observations of a specific lesson. To introduce this part of the interview, pupils were told:

> Now we're going to have a short lesson together, and at the end I'm going to ask you what things you noticed me doing while I was teaching the lesson. Do you remember the lesson on expanding sentences that you had a few weeks ago, when you were videotaped at school? Well, we're going to have another lesson on sentences now, and at the end of it we'll try to do some more work with expanding sentences.

The lesson was taught to all six groups of pupils dealt with differences between statements and commands. The lesson was taught inductively. All groups were given the same initial data, which consisted of two sets of simple comparative sentences.

1	2
The planes fly.	Fly the planes.
The dogs walk.	Walk the dogs.
The plants grow.	
The colors change.	
The door opens.	

Pupils were asked to add more sentences, compare the two sets of sentences, and expand some sentences from each group. All pupil ideas were written on the chalkboard, and statements that compared the two sets of sentences were circled.

At the end of the twenty-minute lesson, pupils were asked what they had observed the "teacher" doing during the lesson. As in Part one, all of their comments were listed on a large white sheet of paper, and tacked to the wall.

Part three: Observing videotaped lessons. To introduce this part of the interview pupils were told:

> A few weeks ago you had a lesson about a lattice. Do you remember the lattice? Here is what it looked like. Here are some problems on the lattice. Do you remember how to do them? ....Good. You remembered a lot. Well, we're going to look at some videotapes of teachers teaching a lesson on the lattice. First we'll look at a fourth grade group, then at a second grade group. We'll just see part of each lesson. After each lesson I'm going to ask you what you noticed that teacher doing.

Two videotaped segments were played (two of the five that had been shown to teachers during the earlier phase) and after each segment pupils were asked what they had seen, and their comments were written down on the white chart paper. As they watched the videotapes pupils were attentive to the lessons, calling out answers to the problems being posed to the videotaped class, and checking the accuracy of their answers.

Part four: Summarizing and evaluating observations: During this part of the interview pupils were asked to read over their earlier comments, which were recorded on the white sheets of paper tacked up on the walls of the room (or the comments were read aloud for them if reading was a problem). They were asked individually to decide what ideas belonged together somehow. After they had time to study the charts and make notes each pupil was asked to suggest one group of items that were similar. These groupings were written down, including the "label" or title the pupil gave, and initialled, to identify which pupil had invented the grouping. After each pupil had given one group, they were asked to suggest any further ideas they might have. All pupil groups responded to this task except the low-achieving second graders, who were unable to find any items that they thought belonged together.

The final task for each pupil group was presented as follows:

> Here is a colored pen for each of you. Read over all the ideas that we've written down, and pick the three that you think are the most important things that teachers do to help you learn. Write your initials down next to the ideas you think are the most important. Each of you may think that different things are important, and that's fine. You don't have to agree with anyone else. Just put down what's important to you.

When pupils were finished with this final task, they were thanked for their help and taken back home.

Each of the four parts of this group interview took from thirty to forty minutes, and the parts were separated by breaks of from ten to thirty minutes. The pupils worked hard at these tasks and were obviously tired by the end of the day, but there was no difficulty in getting them to respond to the questions asked.

This Pupil Concepts of Teaching Task was a major part of Study B on Teacher and Pupil Perceptions of Teaching, but it also contributed greatly to Study C on Teacher Planning. The categories of teacher behavior that appeared to be most relevant to pupils were used to extend the analysis of Teacher Lesson Plans in directions that might otherwise have been ignored.

Subjects

Teacher Sample

The teacher subjects for this study were selected as a result of an earlier study conducted by the Far West Laboratory, called the "Known Sample" Study. In the Known Sample Study two hundred volunteer teachers (second and fifth grades) taught a two-week unit on reading and a two-week unit on mathematics to pupils in their classrooms, using materials provided to them in the form of an Experimental Teaching Unit (ETU). Relevant pretest and posttest data on pupil achievement were collected in connection with the teaching of each ETU. In addition, teachers were observed once during the teaching of each ETU, and information was collected on each occasion regarding the type of classroom activity, class formation, and amount of structure.

Using this data, the directors of the known sample study selected forty teachers from among the two hundred subjects, to represent a geographic range (within California), including both urban and suburban schools, to provide a distribution in terms of pupil ability, to include a variety of teaching styles, and most importantly, to provide differences in pupil gain scores resulting from the two Experimental Teaching Units. The procedures used for this selection of teachers is described in a separate technical report of the Far West Laboratory. (see Berliner, Marliave and Moore, 1976).

As a result of the Known Sample Study, 20 second grade teachers and 20 fifth grade teachers were identified for participation in Special Studies B (Teacher and Pupil Perceptions of Classroom Interaction) and C (Teacher Planning). These teachers were selected to provide two groups of ten teachers at each grade level. The groups were differentiated mainly on the basis on pupil gain scores, and also on the basis of teaching style. The research team conducting Special Studies B and C was not informed about any data collected in the Known Sample Study until after the preliminary analysis of data (coding and categorizing of teacher responses) from their own studies was completed. They observed and interviewed teachers without prior knowledge of recorded pupil gain scores, or of their teaching style, as identified by the Known Sample Study. They attempted to differentiate the teachers on other bases.

The 40 teachers identified in the Known Sample Study all participated in both Study B and Study C. Both of these studies deal with teacher perceptions of pupils, teacher collection and use of information, and teacher decision-making. They differ in that Study B focuses upon interactive teaching while Study C focuses upon preactive teaching (planning). Because planning and interaction are closely interrelated. it seemed wise to work with the same sample of teachers in both studies. This permits certain comparisons between teacher behavior in interactive and preactive settings that would not otherwise be possible.

Pupil Samples

Two different samples of pupils, one a subset of the other, were identified for this study. The pupils in Sample I participated in the interactive phase of the study. The pupils in Sample II participated in the simulation phase of the study.

Pupil sample I. Within each of the classrooms taught by the 40 teachers in the teacher sample, a group of 12 pupils were selected to represent the range of pupil achievement in reading that existed in the class as a whole. Pupil achievement data collected at the beginnings of the Known Sample Study were used to insure that this sample represented a cross-section of pupils in the classroom. Within each general achievement level (slow, average, fast) for a given classroom, pupils were selected randomly in an attempt to provide a group that was also fairly representative of pupil behavior traits (e.g., cooperative vs. "problem" behavior).

The 12 pupils thus selected participated in two lessons planned and taught by their own classroom teacher. Each teacher was asked to make lesson plans specifically for this group of 12 pupils, adapting the curriculum materials provided for this study, to make them suitable for this group. These lessons were videotaped and the tapes used by teachers in the stimulated recall task. (The tasks were described in the previous section). These pupils were the focus of the teachers' attention in the teacher sort task. After each lesson, these pupils were administered a pupil self-rating form to determine self-perceptions of their general ability in reading/mathematics and of their behavior in the particular lesson just ended.

Pupil sample II. The pupils in Sample II participated only in Study B. They were a subset of the pupils in Sample I, drawn only from participating classrooms in the Bay Area. There were a total of 14 such classrooms in three different school districts, including eight fifth grade classrooms and six second grade classrooms. All of the Sample I pupils in these participating Bay Area classrooms were pooled and divided into six large groups on the basis of their achievement in reading (low, average, and high) and their grade level (2nd and 5th). From within each of these six groups a sample of four pupils was randomly selected. The resultant sample is diagrammed below.

	Grade	Level
Pupil Reading Achievement	2nd	5th
Low	4	4
Average	4	4
High	4	4

The pupils comprising each group were generally from different classrooms and different school districts. They thus represented a cross-section of pupils within the Bay Area. (A state-wide cross-section of pupils might have provided a more comprehensive sample, but this was not required for the type of data collection designed for this phase of the study.) Each group of four pupils in this sample of 24 were brought together in a central location one group at a time, to participate in the pupil concepts of teaching task.

CHAPTER FOUR

Data Analysis

Development of Category Systems for Coding of Data

The basic category system was developed to code teacher responses to the various tasks so that the content of responses could be compared across tasks and across studies. The categories were arrived at in the following manner:

1. Responses of 9 teachers to the Teacher Judgment Task (Study B) were reviewed by the project director and categories were formed to describe these responses in terms that would be fairly common to teachers and educational researchers alike.
2. Responses of the same group of teachers to the Stimulated Recall Task (Study B) were reviewed by the project director and the categories already formed were expanded or collapsed, and new categories were added to handle the additional data.
3. Responses of pupils to the Concepts of Teaching Task (Study B) were reviewed by the project director and categories resulting from Step Two were expanded, collapsed, or added.
4. Responses of a new group of 8 teachers to the Teacher Judgment Task and the Stimulated Recall Task were reviewed by the four interviewer-coders working together, and the category system was further refined and clarified.
5. The interviewer-coders worked together over a series of additional audiotaped teacher responses to the same two tasks, attempting to attain concensus on the items to be coded. A few additional refinements were made in the category system at this stage.

In its final form, the basic category system consisted of five major categories, with sub-categories under each. The major categories were General Approach (11 sub-categories), Materials (4 sub-categories), Cognitive Aspects of Lesson (16 sub-categories), Affective Aspects of Lesson (8 sub-categories), and Physical Aspects of Lesson (6 sub-categories). The category system was not meant to be exhaustive in terms of what concepts might be used to describe instruction. It was devised merely to deal with the responses that teachers and pupils gave to the tasks posed them in this study.

An outline of the basic category system is included as Table 1, with an indication of the patterns of response across tasks with regard to various sub-categories. A zero (0) indicates that no instances of that sub-category were found in coding responses to that particular task. Appendix A-1 includes a more detailed presentation of the category system, with examples of each sub-category selected from the various tasks of Study B to illustrate the coding process.

The basic category system was used to code teacher and pupil responses to the following tasks:

Stimulated Recall Task (Study B)
Teacher Judgment Task (Study B)
Pupil Concepts of Teaching Task (Study B)
Teacher Planning of Lessons (Study C)

In addition to the basic category system, a set of task-specific categories was developed for each of the major tasks of the two studies. For Study B these tasks were the Stimulated Recall Task, the Teacher Judgment Task, and the Teacher Sort Task. For Study C task-specific categories were

Table 1

Basic Category System

A Comparison of Category Use in Relation to Various Tasks

	Teacher Judgment	Stimulated Recall	Pupil Concepts of Teaching	Lesson Plans
General Approach				
A. Goals	x	x	o	x
B. Instructional Strategy	x	x	x	o
C. Sequence of Procedures	x	x	o	x
D. Teacher vs. Pupil Structure	x	x	x	o
E. Teacher Activity	x	x	x	x
F. Pupil Activity	x	x	x	x
G. Management/Control	x	x	x	o
H. Seating Arrangement	x	x	o	x
I. Size, Composition of Group	x	x	x	x
J. Pupil Outcomes	o	o	o	x
K. Teacher Style	x	x	o	o
II. Materials				
A. Preparation of Materials	x	o	x	o
B. Type of Materials	x	x	x	x
C. Teacher Use of Materials	x	x	x	x
D. Pupil Use of Materials	x	x	x	x
III. Cognitive Aspects				
A. Teacher Introduction	x	x	x	x
B. Teacher Directions	o	x	x	x
C. Teacher Questioning	x	x	x	x
D. Teacher Selection of Pupils for Discussion	o	x	x	x
E. Teacher Wait for Response	x	x	x	o
F. Teacher Explanation	x	x	x	x
G. Teacher Response to Right/Wrong Answers	x	x	x	o
H. Teacher Summary and Review of Lesson	o	x	x	x
I. Vocabulary	x	x	x	x
J. Content Focus	x	x	x	x
K. Data (selection, organization, amount)	x	x	x	x
L. Pacing/Time	o	x	x	x
M. Pupil Ability	x	x	x	x
N. Pupil Background, Preparation, Needs	o	x	o	x
O. Pupil Ideas	o	x	o	x
P. Pupil Learning	o	x	x	o
IV. Affective Aspects				
A. Teacher Enthusiasm	x	o	x	o
B. Teacher Attitude Toward Pupils	x	x	x	o
C. Teacher Use of Positive Reinforcement	o	x	x	x
D. Teacher Language	o	x	o	o
E. Pupil Participation/Attention	x	x	x	x
F. Pupil Behavior	o	x	x	o
G. Pupil Feelings	o	x	o	x
H. Teacher Image	o	x	o	o
V. Physical Aspects				
A. Pupil Comfort	o	x	o	o
B. Teacher/Pupil Movement	x	x	x	x
C. Teacher/Pupil Proximity	x	o	o	o
D. Visual/Auditory	x	x	x	o
E. Classroom as a Whole	x	o	x	o
F. Non-verbal Communication	o	x	o	o

developed for coding teachers' plans and for analyzing responses to the Simulated Diagnosis Task (long-term planning). In each case the task-specific categories were developed to describe the types of responses teachers actually made to the task, as well as to reflect the types of differences in thought processes that the literature review had suggested might be pertinent.

A brief description of the task-specific categories for each of the major tasks of this study is contained in Appendix A-III, along with a copy of the data summary sheet used to record data for each different task.

Procedures for Coding Responses

Since the category systems were refined by the cooperative efforts of the four interviewer-coders, this process served to train the research team in use of the category systems. Consensus coding was used on all tasks, with two coders having reached agreement on the final categorization of each response.

Teacher responses to interview questions were recorded on audiotapes and coding was done from these tapes. In some instances a tape malfunctioned for part of an interview. If all responses to a task had not been recorded for a given teacher, that teacher was not included in the analysis of that task. Lesson plans were written, as were most of the responses to the two diagnostic simulation tasks. In these instances, coding was done from teachers' written notes.

The initial coding of all responses to a single task was completed by one coder. These categorizations were then reviewed by another coder and, where disagreements or questions arose, the categorization was discussed until agreement could be reached. Approximately one-third of the codings were discussed in this manner. Each task was either coded initially by the project director, or the initial coding of another team member was reviewed by the project director in an attempt to maintain some continuity of coding interpretations across tasks.

None of the coders was informed of the identity of teachers with high pupil gain scores or low pupil gain scores until after all coding had been completed.

Analysis of Teacher Differences

As coding of each task was completed, one or more coders reviewed the data summary sheets for that task to search for patterns of differences in teacher responses to the task. After all tasks had been coded, information on high and low pupil gain scores was obtained from the research team who had worked earlier on the known sample study. The patterns of responses developed from analysis of the various tasks were compared to the teacher groupings based on pupil gain scores to determine whether any relationships existed.

Statistical tests of significance were used as one form of detecting relationships in the data. Selected comparisons were subjected to two-tailed t-tests (continuous variables) and significance tests for contingency tables (categorical variables). Raw scores were used throughout for the t-test. Since all tasks were open-ended, and each teacher was free to make as many comments as he/she wished, and whatever type of comment he/she wished, the various totals on a given task for a given teacher were treated as independent of each other.

As a rule of thumb, the probability level of .10 was generally used for rejecting the null hypothesis of no difference between groups. However, because the study was initially designed to identify variables and relationships for future research, the level of probability was "stretched" in certain cases. The attention of the reader is directed in some cases to probability levels that fall between the .10 and .20 level of significance. Using statistical significance, a feeling of the practical utility of differences, and hunches or theoretical positions all played an integrated role in reaching a conclusion about the merit of findings in this study.

The reader will note as he/she peruses this report that many tests of statistical significance were conducted. The fact that many tests were conducted increases the likelihood that one or more of these might produce a low p value simply by chance, rather than because of a meaningful relationship in the data. Therefore, the p values reported are not very conservative tests of relationships.

The reader should be aware that the data analysis of this study was designed to reduce the probability that important relationships would be overlooked, even though this would tend to increase the risk of erroneously attributing significance to a chance relationship. The plan was to analyze the data for the purpose of generating, rather than testing, hypotheses. The intention is to investigate the most promising hypotheses generated and test them in subsequent research.

Daily Planning Tasks:
General Descriptive Data and Comparisons Based on Pupil Gain Scores

Teacher Lesson Plans

A task-specific category system was developed to code teacher responses to the request to write lesson plans, based on teacher responses to the task itself and on pupil responses to the Pupil Concepts of Teaching Task (Study B). Special attention was paid to teacher selection and statement of objectives, because of the competency based movement, and its focus on use of behavioral objectives in recent years. (See Appendix A - III for the data summary sheet used with this task.) Responses to this task were also coded according to the Basic Category System.

Coded responses were analyzed to focus on:

1. specificity of plans
2. general format of plans
3. types of statements of goals
4. source of goal statements
5. attention to pupil background or preparation (diagnosis)
6. identification of evaluation procedures
7. indication of possible alternative procedures
8. frequency of reference to major categories of the Basic Category System
9. frequency of reference to pupil categories versus process categories
10. planning for specific aspects of instructional process.

Descriptive data. Most of the forty teachers wrote lesson plans as requested, and submitted them to the interviewer at the end of each lesson.

There were a few exceptions. One teacher tape recorded a description of his plans for each lesson. Another simply wrote several notes on the instruction sheets that had been given to teachers. A third mailed in both lesson plans two weeks after the lessons had been taught, indicating that he had thought them through beforehand, but had not had time to write them up until after the lesson. Two second grade teachers did not provide any lesson plans at all. They also said that they would mail plans in after the lesson, but neither of them did.

Two-thirds of the teachers stated in their follow-up notes or comments on their lesson plans that the plans they wrote for these lessons were much more detailed than usual. They indicated that most of their regular planning was done in their heads rather than on paper. One-third of the teachers indicated that they generally did write plans out with slightly less or roughly the same amount of detail. Teachers were almost unanimous, however, in their assertion that student teachers should do detailed written planning. They felt that careful prethinking about a lesson was essential for a novice teacher.

In general the teachers wrote moderately specific lesson plans, though several teachers' plans were vague, and some of them were quite detailed. A vague plan was one which sketched in activities very briefly, such as "Talk about expanding sentences. Hand out worksheets. Check for problems." A specific plan was one which gave information such as specific examples to be given or specific questions to be asked. A detailed plan was one which contained elements such as word-for-word statements that the teacher expected to make, indications of expected pupil responses to questions, diagrams of the way information would be arranged on the chalkboard, and so forth. As is evident in Table 2, there was no difference in specificity of plans from one type of subject matter to another. Fifth grade teachers tended to write more detailed plans than second grade teachers in both reading and math.

Table 2 also indicates that the outline was the most popular format by far, although several teachers wrote narrative descriptions of their planned lessons, and a few went so far as to write "scripts," noting the exact verbal interchanges that they planned to have with pupils during the lesson. There was little difference in preferred format from one grade level to another or from one subject matter to another. Most teachers used the same format for both of their lessons. Three second and three fifth grade teachers varied the format used, and in all but one case provided a more detailed lesson plan in math than in reading.

Some interesting differences appear with regard to statements of goals. The curriculum materials provided to the teachers (See Appendix B - I) gave some possible objectives for the lessons to be taught, and teachers were instructed that they could select from among these objectives or formulate objectives of their own. This procedure was chosen because it seemed to be similar to the realistic situation teachers face when using prepared curriculum materials. The types of optional goals provided to the teachers varied in the two lessons, however. In the materials for the reading lesson, both behavioral and non-behavioral statements of goals were given. In the materials for the math lesson, only non-behavioral goals were given. In planning both lessons, teachers stated non-behavioral goals more frequently than behavioral goals, but the preponderance of non-behavioral goals was much more marked in the math lesson (see Table 2),

Table 2

Lesson Planning Task

Frequency of Use of Various Planning Procedures

	Reading		Math	
	2nd (N=18)	5th (N=20)	2nd (N=18)	5th (N=20)
Specificity of Written Plans				
Vague	5	5	5	5
Specific	10	9	10	9
Detailed	3	6	3	6
General Format of Plans				
Outline	13	15	10	15
Narrative	4	3	5	3
Script	1	0	3	1
Extremely Sketchy	0	2	0	1
Statement of Goals				
Behavioral	7	5	1	1
Non-Behavioral	8	8	14	13
Not Stated	3	7	3	6
Source of Goal Statements				
Accepted/Selected	4	5	7	8
Restated	9	2	5	0
Developed Original	2	6	3	6
Not Stated	3	7	3	6
Attention to Pupil Background, Preparation				
Notes	1	5	3	3
Does Not	17	15	15	17
Identification of Evaluation Procedures				
Notes	2	4	2	4
Does Not	16	16	16	16
Indication of Possible Alternative Procedures				
Notes	4	5	5	6
Does Not	14	15	13	14

which suggests that the type of directions provided in curriculum materials does have some effect on the way teachers formulate their lesson plans. This pattern held for both second and fifth grade teachers.

Interestingly enough, the teachers did not merely select from among the optional goals provided in most cases, though they tended to do this more frequently in the math lesson than the reading lesson. The tendency to restate goals in their own words or develop original goals that were rather different than those provided was particularly strong in second grade teachers in the reading lesson.

It is instructive also to note the types of original goals that were stated. For second grade reading lessons, the two original goal statements were both non-behavioral. For fifth grade reading lessons, the six original goals included two behavioral and four non-behavioral statements. The second grade math lessons included three original goal statements, one behavioral and two non-behavioral. The six original goal statements in fifth grade math lessons included only one behavioral objective.

One grade level difference that appears in relation to goal statements is that fifth grade teachers were more apt to write lesson plans without stating any goals at all than were second grade teachers. This was the case in both reading and math lessons. Five fifth grade teachers stated no goals for either lesson, while three of them stated goals for only one of the two lessons. Two second grade teachers skipped statements of goals for both lessons, and two others provided them for only one lesson.

In general, teachers paid little attention in their written plans to diagnosis of pupil needs in relation to the topic to be taught, or to the evaluation procedures to be used to determine the amount of learning occuring as a result of the lessons (See Table 2). It may well be that since these lessons were "one-shot" affairs inserted into the on-going curriculum, teachers devoted less thought than normal to these aspects of lesson planning. Or it may be that these aspects are more difficult to get out of teachers' heads and on to paper. It is also possible, of course, that teachers really do not devote much attention to these aspects of instruction in their daily plans. Perhaps future studies can examine teacher planning of normal daily lessons and help to answer part of this question.

Some teachers did make note of alternative procedures in writing their lesson plans, though the majority did not. Again, this may indicate one of the difficulties of working with written plans. In follow-up interviews, the majority of teachers indicated that they had considered various alternative procedures in planning their lesson before settling on one procedure (twelve second grade teachers and sixteen fifth grade teachers mentioned such alternatives). It would make sense to believe that at least some of these alternatives, once considered, remained in teachers' minds as options to be called upon during the lesson, if necessary. But these possibilities were rarely noted in the written plans.

Another perspective on lesson plans involves the types of statements used to describe the projected lesson. Statements were categorized according to the basic category system, and were also coded as "general" or "specific." As is noted in Table 3, teachers tended to make more specific statements than general statements. (An example of a general statement in relation to Data Selection would be: do an example of each of the following lattice problems - one arrow, two arrow, opposite arrows. An example of a specific statement would be: try problems -20 ↑ = (10); 3 ↗ = (14); 3 → → = (5); 16 ↑ ↓ = (16); etc. A vague statement such

Table 3

Lesson Planning Task

Mean Numbers of Various Categories of Statements
Included in Lesson Plans

	Reading		Math	
	2nd (N=18)	5th (N=20)	2nd (N=18)	5th (N=20)
No. of General Statements	2.83	2.55	2.83	2.70
No. of Specific Statements	5.61	5.15	4.72	5.40
No. of References to General Approach	3.00	2.50	2.55	2.40
No. of References to Materials	1.83	1.45	2.00	2.10
No. of References to Cognitive Aspects	3.22	3.30	2.83	3.35
No. of References to Affective Aspects	.38	.20	.11	.15
No. of References to Pupil Categories	2.72	2.10	2.00	2.00
No. of References to Process Categories	2.33	2.95	2.72	3.35

as "do some problems," would not be coded as Data Selection at all since there would be no indication of the data to be used.)

For both grade levels and for both lessons teachers tended to make most of their statements about cognitive aspects of the lesson with references to general approach maintaining a close second. More mention of materials was made in planning for the math lesson than the reading lesson. Statements about affective aspects of the lessons were minimal throughout. With the exception of second grade reading lessons, teachers made more statements referring to instructional process than to pupils though the differences between the means of these types of statements was not very large.

Because of the pupil attention to cognitive aspects of the lessons that was revealed in the Pupil Concepts of Teaching Task in Special Study B (Teacher and Pupil Perceptions of Classroom Interaction), particular attention was paid to specific categories of statements in teachers' lesson plans that referred to cognitive aspects of the lesson. The results of this analysis are presented in Table 4. In general, most teachers did not make specific mention in their plans of aspects of the lesson that were apparently relevant to pupils, such as Teacher Explanation, Teacher Directions, and Data Selection. Teacher Introduction and Teacher Questioning, which were not noted as frequently by pupils, received more attention by teachers in their lesson plans than did Teacher Explanation and Teacher Directions. Data Selection received more attention than many other categories, of course, and fifth grade teachers made somewhat more frequent specific references to Data Selection than did second grade teachers. Two categories of importance to pupils received no mention in teachers' lesson plans, but these categories (Teacher Response to Right/Wrong Answers and

Table 4

Lesson Planning Task

Frequency of Use of Specific Statements Related to Various Categories of Cognitive Aspects of Instructional Process

	Reading		Math	
	2nd (N=18)	5th (N=20)	2nd (N=18)	5th (N=20)
Teacher Introduction				
Specific Mention	7	4	2	5
No Specific Mention	11	16	16	15
Teacher Explanation				
Specific Mention	0	2	0	7
No Specific Mention	18	18	18	13
Teacher Directions				
Specific Mention	2	2	3	3
No Specific Mention	16	18	15	17
Teacher Questions				
Specific Mention	5	5	5	5
No Specific Mention	13	15	13	15
Data Selection/Organization				
Specific Mention	7	11	6	8
No Specific Mention	11	9	12	12
Use of Pupil Ideas				
Specific Mention	16	12	8	9
No Specific Mention	2	8	10	11
Content Focus				
Specific Mention	6	4	6	5
No Specific Mention	12	16	12	15
Teacher Summary and Review				
Specific Mention	1	1	2	1
No Specific Mention	17	19	16	19
Inclusion of Worksheets Prepared by Teacher				
Included	6	12	11	12
Not included	12	8	7	8

Teacher Selection of Pupils for Discussion) are highly interaction-oriented, so it is not terribly surprising that teachers would not refer to them in outlining procedures for a lesson.

The highest frequency of specific statements related to cognitive categories is in reference to plans for the use of pupil ideas within the lesson. It is interesting to note that there are more specific plans for use of pupil ideas in reading than in math lessons, and that second grade teachers mention this aspect in their reading plans more frequently than fifth grade teachers.

More common than any reference to particular cognitive aspects of the instructional process was teachers' tendency to include worksheets that they had prepared for pupils to use during the lesson. In planning reading lessons, fifth grade teachers developed these worksheets much more frequently than second grade teachers. In planning math lessons, both second and fifth grade teachers showed an inclination to include worksheets in their plans. Preparation of such a worksheet is one way in which teachers can specify the data to be provided, the questions to be asked, and the activities in which pupils will be engaged. For some teachers it may even be a substitute for identification of behavioral objectives or content focus.

This tendency to construct worksheets when preparing to teach from relatively unfamiliar curriculum materials poses some interesting questions. The use of workbooks by teachers has been criticized in many quarters as a way of providing children with busy work, and cutting down the preparation time teachers must themselves engage in, without providing any increased effectiveness of instruction. In the short lessons taught by the forty teachers in this study, there was no need to provide busy work, for each teacher was only working with a group of twelve pupils. And teacher preparation time must be increased by the "production" of worksheets which they must develop entirely on their own, as was the case in this instance. Apparently worksheets function in some other capacity for these teachers. It might be helpful to know what role this particular type of preparation plays in teachers' preplanning and prethinking about a lesson.

The one type of response to the lesson planning task which was almost standard for all teachers was that of specifying a sequence of procedures to be followed. As noted in Table 5, almost all teachers wrote their plans within a framework which included writing things down in the order in which they were expected to occur. This may not seem at all startling to the reader. After all, lesson plans are a guide to be followed. It certainly makes logical sense that they would identify steps that are to be followed in the order in which they are to occur.

The question that arises here with regard to teacher decision making is, do teachers actually think through a lesson in such a neat and orderly way? The plans on which this analysis is based were written plans - the finished product of teachers' thinking. It would be interesting to know whether some teachers begin their thinking by deciding on a central activity, and then develop other activities that lead up to it. To learn more about the sequence of teachers' thinking with regard to sequence of procedures in a lesson, we need to study more than teachers' written plans. What has been demonstrated to date, however, is that most of the teachers in this study conceived of a lesson plan as including a statement of the sequence of procedures to be followed in the lesson.

Comparative data. When teacher responses to the Lesson Planning Task are organized according to teacher differences in average pupil gain scores

Table 5

Lesson Planning Task

Specifying a Sequence of
Procedures to be Followed

Reading

	Sequence	No Sequence
Second Grade (N=18)	18	0
Fifth Grade (N=20)	18	2

Math

	Sequence	No Sequence
Second Grade (N=18)	17	1
Fifth Grade (N=20)	18	2

on the Experimental Teaching Units, a few significant differences occur. With regard to the general planning procedures used by teachers, tests of significance were not applied in several instances where analysis of responses resulted in 2 x 3 tables. In these cases the Ns were so small that distribution over six cells resulted in an expected frequency of less than five for all cells. Some of these tables are presented here, however, because the raw data are interesting despite the small Ns.

Fifth grade teachers with high and low pupil gain scores showed little difference in the specificity of their written plans (see Table 6) in either reading or math. But second grade teachers with low pupil gain scores tended to be more vague in their reading plans, while second grade teachers with high pupil gain scores tended to be more detailed in their math plans. Second grade teachers showed little difference in their statements of goals for either reading or math lessons, but fifth grade teachers with high pupil gain scores tended to state behavioral objectives in the reading lesson more frequently than those with low pupil gain scores. (The reading lesson was the one in which behavioral goals were included among the optional objectives to be selected.) Note that fifth grade teachers with high and low pupil gain scores were equally apt to state no goals at all in their lesson plans, and the same is true for second grade teachers, though fewer instances of this occurred.

There was no difference among the four teacher groups in their tendency to select goals from the curriculum materials, restate goals, or develop original goals. It is interesting to note, however, that when original goals were developed, the only teachers to state original behavioral goals were teachers with high pupil gain scores (see Table 6). No tests of significance were applied here because of the small N, but it might be

Table 6

Lesson Planning Task

Frequency of Use of Various Planning Procedures Organized by Pupil Gain Scores

Specificity of Written Plans

Reading

Second Grade

	Vague	Specific	Detailed
High Pupil Gain Scores (N=9)	1	6	2
Low Pupil Gain Scores (N=9)	4	4	1

Fifth Grade

	Vague	Specific	Detailed
High Pupil Gain Scores (N=10)	3	5	2
Low Pupil Gain Scores (N=10)	2	4	4

Math

Second Grade

	Vague	Specific	Detailed
High Pupil Gain Scores (N=9)	2	4	3
Low Pupil Gain Scores (N=9)	3	6	0

Fifth Grade

	Vague	Specific	Detailed
High Pupil Gain Scores (N-10)	2	6	2
Low Pupil Gain Scores (N=10)	3	3	4

Table 6 - Continued

Statement of Goals

Reading

Second Grade

	Behavioral	Non-Behavioral	Not Stated
High Pupil Gain Scores (N=9)	3	5	1
Low Pupil Gain Scores (N=9)	4	3	2

Fifth Grade

	Behavioral	Non-Behavioral	Not Stated
High Pupil Gain Scores (N=10)	4	2	4
Low Pupil Gain Scores (N=10)	1	6	3

Math

Second Grade

	Behavioral	Non-Behavioral	Not Stated
High Pupil Gain Scores (N=9)	1	6	2
Low Pupil Gain Scores (N=9)	0	8	1

Fifth Grade

	Behavioral	Non-Behavioral	Not Stated
High Pupil Gain Scores (N=10)	1	5	4
Low Pupil Gain Scores (N=10)	0	8	2

TABLE 6 - Continued

Type of Original Goals Developed

Reading

Second Grade

	Behavioral	Non-Behavioral	No Originals
High Pupil Gain Scores (N=9)	0	2	7
Low Pupil Gain Scores (N=9)	0	0	9

Fifth Grade

	Behavioral	Non-Behavioral	No Originals
High Pupil Gain Scores (N=10)	2	1	7
Low Pupil Gain Scores (N=10)	0	3	7

Math

Second Grade

	Behavioral	Non-Behavioral	No originals
High Pupil Gain Scores (N=9)	1	0	8
Low Pupil Gain Scores (N=9)	0	2	7

Fifth Grade

	Behavioral	Non-Behavioral	No originals
High Pupil Gain Scores (N=10)	1	2	7
Low Pupil Gain SCores (N=10)	0	3	7

TABLE 6 - Continued

Attention to Pupil Background or Preparation

Reading

Second Grade

	Notes Pupil Background	Does Not
High Pupil Gain Scores (N=9)	1	8
Low Pupil Gain Scores (N=9)	0	9

Fifth Grade

	Notes Pupil Background	Does Not
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	1	9

Math

Second Grade

	Notes Pupil Background	Does Not
High Pupil Gain Scores (N=9)	1	8
Low Pupil Gain Scores (N=9)	2	7

Fifth Grade

	Notes Pupil Background	Does Not
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain SCores (N=10)	0	10

Fisher's Exact Test, P = .10526, df = 1

Table 6 - continued

Notes Possible Alternative Procedures

Reading

Second Grade

	Yes	No
High Pupil Gain Scores (N=9)	1	8
Low Pupil Gain Scores (N=9)	3	6

Fifth Grade

	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain SCores (N=10)	1	9

Math

Second Grade

	Yes	No
High Pupil Gain Scores (N=9)	3	6
Low Pupil Gain Scores (N=9)	2	7

Fifth Grade

	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain SCores (N=10)	3	7

useful to pursue this further with larger numbers of teachers.

Second grade teachers with high and low pupil gain scores showed no difference in their tendency to note pupil background or preparation for the topic to be covered in their lesson plans for reading math. Fifth grade teachers with high pupil gain scores, however, did note pupil background more frequently than their counterparts with low pupil gain scores. This difference approached significance for math lesson plans ($p = .11$) and the trend was repeated for reading lesson plans.

Second grade teachers showed no difference in their tendency to note possible alternative procedures in their lesson plans for either reading or math. Fifth grade teachers with high pupil gain scores tended to mention such alternatives more than those with low pupil gain scores, but this difference was not significant, nor was the tendency repeated in the math lesson plans.

There were no differences between teachers with high and low pupil gain scores at either grade level in their indication of procedures to be used in evaluating pupil learning, or in their preference for a particular lesson plan format (outline vs. narrative vs. script).

When the types of statements made by teachers in their lesson plans are examined in light of pupil gain scores, a few differences are noted for second grade teachers (see Table 7). In their math lesson plans, second grade teachers with high pupil gain scores made fewer general statements and more specific statements than did second grade teachers with low pupil gain scores. This difference reached significance ($p < .10$), and the tendency to make more specific statements was repeated in the reading lesson, though

Table 7

Lesson Planning Task

Mean Differences in Various Categories of Statements
Organized by Pupil Gain Scores

	Second Grade		Fifth Grade	
	High Pupil Gain Scores (N=9)	Low Pupil Gain Scores (N=9)	High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=10)
No. of General Statements				
Reading Lesson	2.77	2.88	2.50	2.60
Math Lesson	1.88	3.77 *	2.70	2.70
No. of Specific Statements				
Reading Lesson	6.33	4.88	4.70	5.60
Math Lesson	5.88	3.55 *	5.70	5.10
No. of References to Cognitive Aspects				
Reading Lesson	3.44	3.00	3.20	3.40
Math Lesson	3.22	2.44	3.50	3.20
No. of References to Affective Aspects				
Reading Lesson	.33	.22	.10	.30
Math Lesson	.22	.00	.10	.20
No. of References to Pupil Categories				
Reading Lesson	2.88	2.55	2.20	2.00
Math Lesson	2.11	1.88	2.10	1.90
No of References to Process Categories				
Reading Lesson	3.33	2.33 *	2.70	3.20
Math Lesson	3.22	2.22	3.20	3.50

* t - test of significance, p <.10, df = 16

the difference was not significant. In their reading lesson plans, second grade teachers with high pupil gain scores made more statements referring to categories dealing with instructional process than did those with low pupil gain scores ($p < .10$), and again the trend was repeated in the math lesson plans, though the difference was not significant.

The analysis of teacher responses to the Lesson Planning Task that is of most interest to us is that dealing with specific statements about cognitive aspects of instructional process, because of the findings in Special Study B (Teacher and Pupil Perceptions of Classroom Interaction) that pupils attended strongly to certain of these aspects. The category of Data Selection was one which pupils attended to a great deal in observing classroom interaction, and Teacher Explanation and Teacher Directions were also referred to frequently in their retrospective comments about things teachers do to help pupils learn. Teacher Explanation and Teacher Directions received very few specific references in teachers' lesson plans, and there were no significant differences between teachers with high and low pupil gain scores with respect to these categories, although fifth grade teachers with high pupil gain scores did tend to make more statements about teacher explanation in their math lessons than did those with low pupil gain scores. Fifth grade teachers with high and low pupil gain scores showed no differences in their frequency of statements about Data Selection (see Table 8), but second grade teachers with high pupil gain scores made specific statements about Data Selection more frequently than those with low pupil gain scores. This pattern was significant in math lesson plans ($p = .07$) and the pattern was repeated in reading lesson plans.

Teachers as a whole made more frequent references to Teacher Introduction and Teacher Questions than they did to Teacher Explanation and Teacher Directions. There were no significant differences for second grade teachers in their tendency to plan specifically for Teacher Introduction (see Table 8), but fifth grade teachers with low pupil gain scores made statements about Teacher Introduction more frequently than did teachers with high pupil gain scores. This pattern was significant for reading lesson plans (p = .04) and was repeated for math lesson plans, though it was not significant in that instance. Second grade teachers with high pupil gain scores showed a tendency to make more specific references to Teacher Questions than did their counterparts with low pupil gain scores. This pattern was repeated in both reading and math lesson plans, though it was not significant in either instance.

One rather puzzling finding was that second grade teachers with low pupil gain scores made significantly more specific statements about content focus in their reading lesson plans than did second grade teachers with high pupil gain scores (p = .07). The pattern was not repeated for second grade teachers' math lessons, and it was reversed for fifth grade teachers' math lessons, where teachers with high pupil gain scores tended to mention content focus more often than those with low pupil gain scores. This latter difference was not significant.

While teachers as a whole made frequent reference to use of pupil ideas in their lesson plans, and tended to include teacher-prepared worksheets in their plans, there were no significant differences between teachers of high and low pupil gain scores with regard to either of these tendencies. Second grade teachers with high pupil gain scores tended to make fewer

Table 8

Lesson Planning Task

Frequency of Use of Specific Statements About Cognitive Aspects
Organized by Pupil Gain Scores

Data Selection

Reading

Second Grade

	Yes	No
High Pupil Gain Scores (N=9)	5	4
Low Pupil Gain Scores (N=9)	2	7

Fifth Grade

	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	5	5

Math

Second Grade

	Yes	No
High Pupil Gain Scores (N=9)	5	4
Low Pupil Gain Scores (N=9)	1	8

Fifth Grade

	Yes	No
High Pupil Gain Scores (N-10)	4	6
Low Pupil Gain Scores (N=10)	4	6

Fisher's Exact Test, p = .06561, df = 1.

TABLE 8 - Continued

Teacher Introduction

Reading

Second Grade

	Yes	No
High Pupil Gain Scores (N=9)	4	5
Low Pupil Gain Scores (N=9)	3	6

Fifth Grade

	Yes	No
High Pupil Gain Scores (N=10)	0	10
Low Pupil Gain Scores (N=10)	4	6

Fisher's Exact Test, p = .04334, df = 1.

Math

Second Grade

	Yes	No
High Pupil Gain Scores (N=9)	1	8
Low Pupil Gain Scores (N=9)	1	8

Fifth Grade

	Yes	No
High Pupil Gain Scores N=10)	1	9
Low Pupil Gain Scores (N=10)	4	6

Fisher's Exact Test, p = .04334, df = 1.

TABLE 8 - Continued

Teacher Questions

Reading

Second Grade	Yes	No
High Pupil Gain Scores (N=9)	4	5
Low Pupil Gain Scores (N=9)	1	8

Fifth Grade	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	2	8

Math

Second Grade	Yes	No
High Pupil Gain Scores (N=9)	4	5
Low Pupil Gain Scores (N=9)	1	8

Fifth Grade	Yes	No
High Pupil Gain Scores N=10)	2	8
Low Pupil Gain Scores N=10)	3	7

Table 8 - Continued

Content Focus

Reading

Second Grade

	Yes	No
High Pupil Gain Scores (N=9)	1	8
Low Pupil Gain Scores (N=9)	5	4

Fifth Grade

	Yes	No
High Pupil Gain Scores (N=10)	1	9
Low Pupil Gain Scores (N=10)	3	7

Fisher's Exact Test, p = .06561 df = 1.

Math

Second Grade

	Yes	No
High Pupil Gain Scores (N=9)	2	7
Low Pupil Gain Scores (N=9)	4	5

Fifth Grade

	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	1	9

worksheets for the reading lesson than did teachers with low pupil gain scores, but the difference was not significant. This is interesting in light of the recent studies indicating that pupils achieve better in reading when teachers do not use homemade instructional materials (Hall, 1975; Stallings, 1975; Brophy, 1975). In this instance, of course, there were no "expert-prepared" instructional materials to be given to pupils, which may have increased teachers' tendencies to make such materials themselves.

Looking Back/Looking Ahead

The Looking Back/Looking Ahead Task consisted of a few questions asked of teachers during the interview that followed the reading lesson. The questions were directed toward gathering information about the kinds of decisions teachers might make in evaluating a lesson immediately after teaching it. In particular, teachers were asked how they might reteach the same lesson to another group of pupils, and what they might plan to do if they were to teach a follow-up lesson to the same pupils.

It was originally expected that some teachers might prefer to use their evaluation of a lesson to rethink the lesson itself, planning how they might reteach it if they had the opportunity, and that other teachers might prefer to use their evaluation to plan how to proceed with a follow-up lesson. In the interviews, teachers expressed no such preferences. Almost all teachers discussed both a reteach and a follow-up lesson very readily, and said that they normally thought of both of those possibilities in thinking about a lesson after they had taught it.

Descriptive data. There were some differences between grade levels in response to this task. In discussing changes they would make on reteaching their lesson (see Table 9), fifth grade teachers more often mentioned such changes, while second grade teachers were more apt to be contented with teaching the lesson the same way a second time. Almost all teachers who mentioned changes to be made spoke of cognitive aspects of their lessons. Neither group of teachers made very frequent mention of changes in instructional materials to be used.

In giving reasons for their proposed changes, second grade teachers mentioned cognitive considerations somewhat more often than fifth grade teachers, while fifth grade teachers mentioned affective considerations more often than second grade teachers (see Table 10). The affective considerations mentioned tended to be pupil participation and attention.

Both second and fifth grade teachers responded in much the same way to questions about planning follow-up lessons (see Table 11). Affective aspects of lessons were mentioned very infrequently. Materials to be used were discussed by several teachers, but ignored by most. Cognitive aspects of the proposed lessons were commented on by the majority of the teachers, and fifth grade teachers mentioned them more than second grade teachers.

Very few fifth grade teachers mentioned any reasons for their decisions in discussing plans for follow-up lessons (see Table 12), and no fifth grade teachers mentioned affective considerations. Half of the second grade teachers discussed reasons for their decisions, and while most of these mentioned cognitive considerations, only two of them identified affective considerations. It is interesting to contrast this with the considerations mentioned in planning to reteach the lesson, where ten of the forty teachers

Table 9

Looking Back / Looking Ahead Task

Planning Changes for Reteaching the Lesson

Mentioned Changes to be Made

	Yes	No
Second Grade (N=16)	6	10
Fifth Grade (N=19)	12	7

Planned Changes in Materials Used

	Yes	No
Second Grade (N=16)	4	12
Fifth Grade (N=19)	3	16

Planned Changes in Cognitive Aspects

	Yes	No
Second Grade (N=16)	6	10
Fifth Grade (N=19)	11	8

Table 10

Looking Back / Looking Ahead Task

Noting Reasons for Decisions About Changes
in
Plans for Reteaching

Mentioned Cognitive Considerations

	Yes	No
Second Grade (N=16)	6	10
Fifth Grade (N=19)	3	16

Mentioned Affective Considerations

	Yes	No
Second Grade (N=16)	3	13
Fifth Grade (N=19)	7	12

Table 11

Looking Back / Looking Ahead Task

Planning Follow-Up Lessons

Discussed Plans For A Follow-Up Lesson

	Yes	No
Second Grade (N=16)	15	1
Fifth Grade (N=19)	19	0

Mentioned Materials to Be Used

	Yes	No
Second Grade (N=16)	4	12
Fifth Grade (N=19)	3	16

Mentioned Cognitive Aspects

	Yes	No
Second Grade (N=16)	11	5
Fifth Grade (N=19)	17	2

Mentioned Affective Aspects

	Yes	No
Second Grade (N=16)	2	14
Fifth Grade (N=19)	0	19

Table 12

Looking Back / Looking Ahead Task

Noting Reasons for Follow-Up Plans

Mentioned Cognitive Considerations

	Yes	No
Second Grade (N=16)	7	9
Fifth Grade (N=19)	3	16

Mentioned Affective Considerations

	Yes	No
Second Grade (N=16)	2	14
Fifth Grade (N=19)	0	19

mentioned affective considerations. Teachers may be slightly more aware of affective aspects of a lesson in retrospect than in forethought. In any case, this pattern of little mention of affective aspects of instruction in planning follow-up lessons seems to repeat the pattern of little reference to affective aspects in the original written lesson plans.

During the Looking Back/Looking Ahead interview, teachers were also asked what alternatives they had considered in planning their original lessons. Their responses are charted in Tables 13 and 14. Most teachers indicated that they had thought of more than one way to proceed in teaching the lesson. Of the alternatives considered, instructional materials and cognitive aspects of the lesson were the possibilities most frequently posed by both second and fifth grade teachers. Several fifth grade teachers also thought of alternative pupil activities, but only one second grade teacher mentioned this type of alternative.

In discussing their reasons for selecting from among the alternatives considered for their original lesson plans, teachers again mentioned cognitive considerations more frequently than affective considerations, and this was true for both fifth and second grade teachers (see Table 14). Again, this tends to repeat the pattern of rather infrequent mention of affective aspects of lessons, a pattern that is broken only by the fact that a number of fifth grade teachers mentioned affective considerations in planning for reteaching of their lessons (Table 10).

Table 13

Looking Back / Looking Ahead Task

Alternatives Considered in Planning Original Lesson

Mentioned Alternatives Considered

	Yes	No
Second Grade (N=16)	12	4
Fifth Grade (N=19)	16	3

Mentioned Alternative Materials to be Used

	Yes	No
Second Grade (N=16)	7	9
Fifth Grade (N=19)	7	12

Mentioned Alternative Pupil Activities

	Yes	No
Second Grade (N=16)	1	15
Fifth Grade (N=19)	5	14

Mentioned Alternative Cognitive Aspects

	Yes	No
Second Grade N=16)	5	11
Fifth Grade (N=19)	4	15

Table 14

Looking Back / Looking Ahead Task

Noting Reasons for Selecting From Among Alternatives in Planning Original Lesson

Mentioned Cognitive Considerations

	Yes	No
Second Grade (N=16)	8	8
Fifth Grade (N=19)	11	8

Mentioned Affective Considerations

	Yes	No
Second Grade (N=16)	2	14
Fifth Grade (N=19)	0	19

As teachers discussed their original planning for the reading lesson, some interesting comments were made about the planning process. Six teachers (three second grade, three fifth grade) described their planning as a long-term process that went on for several days, while they mulled over ideas but made no definite decisions. They mentioned thinking about the lesson in bed at night and in the car on the drive to school in the morning. They said that getting ideas for lessons in out-of-school times and places was typical for them; teaching was on their mind at many odd moments.

Two second grade teachers mentioned the fact that they had discussed their plans for the reading lesson with a "consultant" - a friend, a fellow teacher, or a specialist. Another second grade teacher said that he had considered consulting with someone else about his plans but had decided that his idea was really good and that he didn't need another's advice or reaction.

Teachers were not asked directly about either of these two possible planning procedures, and it is quite possible that other teachers engaged consultants or withheld decisions for several days but failed to report this. In a later study, it would probably be useful to inquire directly about these practices.

Comparative data. When teacher responses to the Looking Back / Looking Ahead Task were analyzed on the basis of differences in pupil gain scores, no significant differences were found. Fifth grade teachers particularly tended to respond in similar ways to this task, regardless of their average pupil gain scores on the Experimental Teaching Units. Second grade teachers with high pupil gain scores responded somewhat differently than their counterparts with low pupil gain scores (see Table 15), but only one of these differences approached significance. There was a tendency for second grade teachers with high pupil gain scores to mention cognitive considerations more frequently in discussing their plans for follow-up lessons ($p = .07$).

The only teachers to mention affective aspects of the lesson or affective considerations for follow-up lessons and for selecting procedures for the original lesson were second grade teachers with high pupil gain scores. Nor was it the same two teachers who mentioned affective aspects in response to three different questions. In all, six of the seven second grade teachers with high pupil gain scores mentioned affective aspects of the original lesson plan and the follow-up lesson, while none of the other three teacher groups discussed affective matters in relation to these three questions. None of the three responses in and of themselves are statistically significant ($p = .175$) but taken together they suggest an area to be investigated further.

Also of interest is the fact that of the six teachers who described their planning for the reading lesson as a long-term process lasting several days, five were teachers with high average pupil gain scores. The two second grade teachers who reported consulting with others about their plans were both teachers with high pupil gain scores. The second grade teacher who decided not to ask the advice of others was a teacher with low pupil gain score. These differences in responses suggest that a more direct approach to gathering information about these planning procedures may yield more useful data.

Table 15

Looking Back/Looking Ahead Task

Teacher Responses Organized By Pupil Gain Score

Proposed Changes in Plans for Reteaching Lesson

Second Grade	Yes	No
High Pupil Gain Score (N=7)	4	3
Low Pupil Gain Score (N=9)	2	7

Fifth Grade	Yes	No
High Pupil Gain Score (N=10)	7	3
Low Pupil Gain Score (N=9)	5	4

Mentioned Affective Aspects in Planning Follow-Up Lessons

Second Grade	Yes	No
High Pupil Gain Score (N=7)	2	5
Low Pupil Gain Score (N=9)	0	9

Fisher's Exact Test, p = .17500, df = 1.

Fifth Grade	Yes	No
High Pupil Gain Score (N=10)	0	10
Low Pupil Gain Score (N=9)	0	9

Mentioned Cognitive Considerations in Planning Follow-Up Lessons

Second Grade	Yes	No
High Pupil Gain Score (N=7)	5	2
Low Pupil Gain Score (N=9)	2	7

Fisher's Exact Test, p = .07168, df = 1.

Fifth Grade	Yes	No
High Pupil Gain Score (N=10)	2	8
Low Pupil Gain Score (N=9)	1	8

Table 15 continued

Mentioned Affective Considerations in Selecting Alternatives for the Original Lesson

Second Grade	Yes	No
High Pupil Gain Score (N = 9)	2	5
Low Pupil Gain Score (N = 9)	0	9

Fisher's Exact Test, p =.17500, df=1.

Fifth Grade	Yes	No
High Pupil Gain Score (N = 10)	0	10
Low Pupil Gain Score (N = 9)	0	9

Mentioned Cognitive Considerations in Selecting Alternatives for the Original Lesson

Second Grade	Yes	No
High Pupil Gain Score (N = 7)	2	5
Low Pupil Gain Score (N = 9)	6	3

Fifth Grade	Yes	No
High Pupil Gain Score (N = 10)	5	5
Low Pupil Gain Score (N = 9)	6	3

Lesson Variations

The Lesson Variations Task involved a set of questions that were asked at the close of the interview following the math lesson. When teachers had viewed and commented on the five videotaped segments of variations on the lattice lesson, they were asked whether any additional variations occurred to them, and how they might change the lesson if they were going to reteach it. These questions were asked to gather some information about how teachers might use their observations of other teachers in making decisions about their own instructional program.

There were some problems in taping this interview, and responses of six teachers were lost because of faulty recordings, so that the results of this task are based on the responses of sixteen second grade teachers and eighteen fifth grade teachers.

Descriptive data. Most teachers responded quite positively to the opportunity to see how other teachers had handled the lattice lesson, and their responses to the lesson variation task tend to demonstrate that they were interested in using some of the new ideas they gathered from the experience. Most of the teachers identified major variations that could be made on the lattice lesson after they had viewed the videotapes (see Table 16). The videotapes were a major source of suggestions for variation. Of the fourteen second grade teachers who identified possible variations, ten mentioned ideas gleaned from the videotaped lessons, while six mentioned original ideas (some teachers mentioned both original ideas and ideas suggested by the videotapes). The fifth grade teachers responded in similar fashion, with fourteen identifying possible variations. Nine fifth grade teachers suggested variations that came from the videotaped lessons. Eight mentioned original ideas. Very few teachers thought back to the original curriculum materials they had been given to identify additional variations on the lesson. Apparently they had selected what they liked from those materials already.

The majority of teachers suggested more than one possible variation of the lesson. The suggestions of second grade teachers ranged from 0 to 5, with a mean of 1.94. The variations identified by fifth grade teachers ranged from 0 to 3, with a mean of 1.81.

When teachers were asked what changes they might make in their own lessons if they retaught them, most of them did identify changes they would like to make (see Table 17, and note that the number of fifth grade teachers responding has dropped from eighteen to sixteen, because two tapes ran out before the interview was completed, and responses to these final questions were not recorded). This response suggests that observing other teachers' lessons did stimulate the thinking of teachers in this study. When asked about reteaching the reading lesson, not as many teachers mentioned changes they would make (see Table 9). Six out of sixteen second grade teachers and twelve out of nineteen fifth grade teachers mentioned changes to be made in the reading lesson, as contrasted with the eleven out of sixteen second grade teachers and fourteen out of sixteen fifth grade teachers who discussed changes to be made in reteaching the math lesson. More teachers talked about changes in cognitive aspects of the lattice lesson than about changes in instructional materials, as was the case in discussing a reteaching of the reading lesson. However, changes in instructional materials were mentioned more often with regard to reteaching the lattice lesson than for the reading lesson. For reading, four out of sixteen second grade teachers

Table 16

Lesson Variation Task

Generating Variations on the Lattice Lesson

Identified Additional Variations

	Major Variations	Only Minor Variations	No Variations
Second Grade (N=16)	11	3	2
Fifth Grade (N=18)	13	1	4

Used Videotapes as a Source of Variation

	Yes	No
Second Grade (N=16)	10	6
Fifth Grade (N=18)	9	9

Developed Original Variations

	Yes	No
Second Grade (N=16)	6	10
Fifth Grade (N=18)	8	10

Table 16 continued

Used Curriculum Materials as a Source of Variation

	Yes	No
Second Grade N=16	1	15
Fifth Grade (N=18)	2	16

Table 17

Lesson Variation Task

Planning Changes for Reteaching the Lattice Lesson

Mentioned Changes to be Made

	Yes	No
Second Grade (N=16)	11	5
Fifth Grade (N=16)	14	2

Mentioned Changes in Instructional Materials

	Yes	No
Second Grade (N=16)	6	10
Fifth Grade (N=16)	7	9

Mentioned Changes in Cognitive Aspects

	Yes	No
Second Grade (N=16)	8	8
Fifth Grade (N=16)	11	5

and three out of nineteen fifth grade teachers planned changes in instructional materials. For the lattice lesson six out of sixteen second grade teachers and seven out of sixteen fifth grade teachers mentioned such changes in discussing a reteaching of the lesson.

In order to gather some information on how atypical the teachers considered the lattice lessons that they taught for this study to be, interviewers asked teachers how they might have taught the lesson if no restrictions had been set on the length of the lesson or if the group of twelve pupils of mixed ability had not been selected as those the teacher was required to instruct. Interestingly enough, more teachers thought the grouping procedures for the lesson to be less typical than the timing (see Table 18). Almost half of the teachers would typically have taught the lattice lesson to the whole class, and about one fourth of them would have worked with an ability group or a group with less than twelve pupils. Most of the teachers would have made no changes in the length of the lesson, but of those who would have chosen a different time period, second grade teachers preferred to shorten the lesson, while fifth grade teachers preferred to lengthen it.

Comparative data. When teacher responses to the Lesson Variation Task were organized on the basis of teacher differences in average pupil gain score on the Experimental Teaching Units, few differences were found. For the most part, teachers with high and low pupil gain scores responded in similar fashion. At the second grade level the teachers whose responses were lost because of malfunctioning tapes were four teachers with high pupil gain scores; so some imbalance does exist in comparisons of responses at this grade level.

Table 18

Lesson Variation Task

Teaching the Lattice Lesson With No "Restrictions"

Mentioned Changes in Grouping Procedure

	Teach Whole Class	Ability Group or Smaller Group	No Change
Second Grade (N=16)	7	5	4
Fifth Grade (N=16)	7	4	5

Mentioned Changes in Timing

	Shorter Lesson	Longer Lesson	No Change
Second Grade (N=16)	4	1	11
Fifth Grade (N=16)	0	5	11

The few differences in response that did show up are presented in Table 19. None of these were tested for significance, because the N was too small when distributed over a 2 x 3 table. It would be interesting to investigate some of these possible differences further with larger numbers of teachers. For the moment all that can be said is that some interesting possibilities exist.

As indicated in Table 19, second grade teachers with high pupil gain scores tended to mention changes to be made in reteaching the lattice lesson less frequently than did the three other groups of teachers. As a whole, there were more teachers who mentioned possible changes in the math lesson (after having viewed other teachers' lessons) than there were teachers who mentioned possible changes in the reading lesson (after viewing their own lessons played back). When Table 19 is compared to Table 15, it becomes apparent that most of the increase in the number of changes mentioned for the math lesson as opposed to the reading lesson are accounted for by teachers with low pupil gain score (second grade, high pupil gain score, four out of seven mention changes in reading and three out of six mention changes in math; second grade, low pupil gain score, two out of nine mention changes in reading, eight out of ten mention changes in math; fifth grade, high pupil gain score, seven out of ten mention changes in reading and seven out of eight mention changes in math; fifth grade, low pupil gain scores, five out of nine mention changes in reading and seven out of eight mention changes in math). This would seem to suggest that the teachers with low pupil gain scores are more suggestible as a result of observing other teachers than are teachers with high pupil gain scores.

Table 19 indicates that fifth grade teachers with high pupil gain scores mention changes in cognitive aspects of the lattice lesson more frequently than any of the other three groups of teachers. Second grade teachers with high pupil gain scores, in discussing changes they would have made in grouping procedures (if no restrictions had been imposed by the study) did not mention ability grouping or small group instruction as frequently as did their counterparts with low pupil gain scores. None of the second grade teachers with high pupil gain scores mentioned making changes in the length of the lattice lesson if the limitations imposed by the study were removed, but four of the second grade teachers with low pupil gain scores indicated that normally they would have taught shorter lessons and tried to cover less content in a single lesson.

Table 19

Lesson Variation Task

Teacher Responses Organized By Pupil Gain Score

Mentioned Changes to be Made In Reteaching Lattice Lesson

Second Grade

	Yes	No
High Pupil Gain Score (N=6)	3	3
Low Pupil Gain Score (N=10)	8	2

Fifth Grade

	Yes	No
High Pupil Gain Score (N=8)	7	1
Low Pupil Gain Score (N=8)	7	1

Mentioned Changes in Cognitive Aspects of Lesson

Second Grade

	Yes	No
High Pupil Gain Scores (N-6)	3	3
Low Pupil Gain Scores (N=10)	5	5

Fifth Grade

	Yes	No
High Pupil Gain Score (N=8)	7	1
Low Pupil Gain Scores (N=8)	4	1

Table 19 continued

Mentioned Changes in Grouping Procedures if No Restrictions

Second Grade

	Whole Class	Ability Small Group	No Change
High Pupil Gain Scores (N=6)	4	1	1
Low Pupil Gain Scores (N=10)	3	4	3

Fifth Grade

	Whole Class	Ability Small Group	No Change
High Pupil Gain Score (N=8)	4	3	2
Low Pupil Gain Score (N=8)	3	1	3

Mentioned changes in Length of Lesson If No Restrictions

Second Grade

	Shorter Lesson	Longer Lesson	No Change
High Pupil Gain Score (N=6)	0	0	6
Low Pupil Gain Score (N=10)	4	1	5

Fifth Grade

	Shorter Lesson	Longer Lesson	No Change
High Pupil Gain Score (N=8)	0	2	7
Low Pupil Gain Score (N=7)	0	3	4

Simulation Diagnostic Tasks: General Descriptive Data and Comparisons Based on Pupil Gain Scores

Short-Term Diagnosis of Reading Difficulties. To gather information about teacher ability to diagnose reading difficulty, a videotape of four children reading aloud was presented to teachers. They were asked to identify each child's problems, and suggest strategies to help each child improve. The videotape was a shorter version of a tape prepared originally by Educational Testing Service during Phase II of the Beginning Teacher Evaluation Study (McDonald, Elias, Stone, Wheeler, Lambert, Calfee, Sandoval, and Lockheed, 1975). A copy of the test form is included in Appendix B-III.

Descriptive Data. Second grade teachers scored slightly higher on the diagnostic test than did fifth grade teachers, with a mean score of 12.77 as compared to 11.27. There were other slight differences in teachers' reactions to the test itself and the simulation setting (see Table 20). Most teachers preferred the checklist to the open-ended question as a way of identifying children's reading difficulties. Second grade teachers were more apt to like the open-ended question than fifth grade teachers.

In identifying other information they would need (in addition to the oral reading sample) to make an accurate diagnosis of reading difficulties, second grade teachers tended to want "more of the same," (e.g., child reading another passage as well) or more time and variety of situation (e.g., hearing child read in different settings over a few weeks). Fifth grade teachers indicated that they would need other tests, written records, and information on the child's cultural, physical, and psychological background more frequently than did second grade teachers. An interesting shift in

Table 20

Reactions to Test of Reading Difficulties

	Second Grade (N=20)	Fifth Grade (N=19)
Preferred Form		
Check List	11	14
Open Ended Question	8	3
Both Together	1	2
Other Information Needed for Accurate Diagnosis		
None	2	1
More of Same	9	3
Written Records, Other Tests	1	4
More Time, Variety of Situation	6	3
Pupil Background (Cultural, etc.)	2	7
Advice of Specialist	0	1
Other Information Useful for Effective Instruction		
None	0	1
More of Same	1	5
Written Records, Other Tests	5	8
More Time, Variety of Situation	5	2
Pupil Background (Cultural, etc.)	7	1
Advice of Specialist	1	2
No Response	1	0
Comparison Between Simulation and Normal Classroom Diagnosis		
Normally more extensive information	13	15
Normally less pressured test situation	4	0
Normally less focus on individual, oral reading	2	2
Basically similar	0	2
No Response	1	0

response occurred when teachers were asked what other information they would find useful for effective instruction. Here second grade teachers were the ones asking for knowledge of pupil background more frequently than fifth grade teachers, while fifth grade teachers asked for "more of the same" more frequently than second grade teachers, but continued to want other tests. Apparently teachers do see certain types of information as differentially useful for different purposes. Thirty-one of the thirty-nine teachers mentioned different types of information in response to the two questions.

Comparative data. When teacher responses to the reading difficulties diagnostic tests are compared on the basis of average pupil gain scores on the Experimental Teaching Units, no significant differences are found. In fact, it is interesting to note that the mean diagnostic test score for teachers with low pupil gain scores was higher at both grade levels than the mean score for teachers with high pupil gain scores (see Table 21). In other words, teachers with low pupil gain scores were somewhat more accurate in diagnosing pupil's reading difficulties in the simulation setting. However, the difference was not great enough to be statistically significant.

To double check this finding we selected only those teachers who had demonstrated high and low pupil gain scores on the reading ETUS (eliminating those who had high or low pupil gain scores on math ETUS, but not in reading) and recomputed the mean scores on the reading diagnostic test (developed by ETS). Essentially the same results were found (see Table 21). Some obvious questions about test validity are raised by these findings; especially since ETS also found some negative relationships between this diagnostic test and student growth (McDonald, et al, 1975).

When teacher reactions to the simulation setting are compared on the basis of pupil gain scores, some interesting differences are noted, but the variety of responses combined with the small N made statistical tests difficult. It is possible that a more structured set of questions presented to a larger number of teachers would demonstrate significant differences.

The most interesting differences between teachers in this study (see Table 22) relate to the types of information identified as needed for diagnosis or useful for instruction. On both questions and at both grade levels, teachers with high average pupil gain scores mentioned "more time and variety of situation" more frequently than teachers with low pupil gain scores. Fifth grade teachers with low pupil gain scores emphasized pupil background information as necessary for diagnosis much more than any other group, while second grade teachers with low pupil gain scores emphasized pupil background information as useful for instruction more than any other group.

In comparing the simulation to normal classroom diagnostic procedures, teachers with low pupil gain scores at both grade levels tended to note that they normally used more extensive information than did teachers with high pupil gain scores. Second grade teachers with high pupil gain scores were the only ones to mention that they normally used a less pressured test situation for pupils. Other differences among groups were minimal. In general, the two groups of second grade teachers tended to be more different from each other than the two groups of fifth grade teachers in their responses to this task.

Table 21

Mean Scores on Test of Reading Difficulties
Organized by Pupil Gain Scores

All Teachers

Second Grade		Fifth Grade	
High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=10)	High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=10)
12.35	13.20	11.05	11.50

Teachers Selected for High and Low Pupil Gain Scores in Reading Only

Second Grade		Fifth Grade	
High Pupil Gain Scores (N = 8)	Low Pupil Gain Scores (N = 5)	High Pupil Gain Scores (N = 5)	Low Pupil Gain Scores (N = 6)
11.19	13.60	11.60	11.42

Table 22

Reactions to Test of Reading Difficulties

Organized by Pupil Gain Scores

	Second Grade		Fifth Grade	
	High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=9)	High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=10)
Preferred Form				
Check List	4	7	7	7
Open Ended Question	5	3	1	2
Both Together	1	0	1	1
Other Information Needed for Accurate Diagnosis				
None	0	2	0	1
More of Same	4	5	2	1
Written Records, Other Tests	0	1	3	1
More Time, Variety of Situation	5	1	3	0
Pupil Background (Cultural, etc.)	1	1	1	6
Advice of Specialist	0	0	0	1
Other Information Useful for Effective Instruction				
None	0	0	1	1
More of Same	0	1	3	2
Written Records, Other Tests	4	1	2	5
More Time, Variety of Situation	4	1	2	0
Pupil Background (Cultural, etc.)	2	5	1	0
Advice of Specialist	0	1	0	2
Comparison Between Simulation and Normal Classroom Diagnosis				
Normally more extensive information	5	8	5	9
Normally less pressured test situation	4	0	0	0
Normally less focus on individual, oral reading	1	1	2	0
Basically similar	0	0	2	1
No Response	0	1	0	0

Long-Term Diagnosis of Reading (Data Bank Task)

In the simulation task on long-term diagnosis teachers were given access to a data bank of information about a "new group" of pupils being assigned to them, for whom they had to plan a reading program. They were free to ask any questions about the pupils, and information from the data bank was provided in response to their questions. No information was provided that was not asked for. On occasion teachers requested information that was not available in the data bank, and this was noted. (Twenty-four out of two hundred seven questions were not answerable by information in the data bank.)

Descriptive data. It is important to note first that most teachers felt there were major differences between the simulation task and their normal long-term diagnostic/planning procedure (see Table 23). This was expected, and in fact it was hoped that having the simulation task as a basis for comparison might encourage teachers to describe their normal procedures more fully. The types of differences teachers identified were not unexpected, and there was almost no difference between the responses of second and fifth grade teachers (see Table 23). It is interesting to note, however, that three out of forty teachers indicated that their normal planning or grouping of pupils for reading was done by teacher committee rather than by the individual teacher.

The categories of information available to teachers in the data bank included photographs of the children, family background information, teacher comments, report card records, health and attendance records, achievement tests, IQ tests, psychological reports, sociometric data, reading programs experienced previously, parent conference reports, and information on special interests and hobbies. Teacher questions were analyzed to determine what areas of information they were interested in (e.g., physical, academic, social) and what types of information (e.g., standardized tests, teacher comments, seeing the child). In addition the matter of breadth and depth of information requested was considered. Breadth of information sought was identified as the number of different categories of information requested. Depth of information sought was identified as the number of questions asked (amount of information requested) related to a given category.

There was surprisingly little difference between second and fifth grade teachers in the areas or types of information they requested (see Table 24). More differences show up when we consider the specific categories of information requested (see Table 25). Here we note that second grade teachers inquire rather more frequently about family background, psychological tests, previous reading programs, report cards, and parent conferences, while fifth grade teachers inquire more frequently about IQ tests.

Teachers were asked to make use of the information they acquired from the data bank by writing thumbnail sketches describing their fourteen "pupils," and indicating what kind of reading programs they would plan for them. Teacher responses to this task were analyzed to determine the areas of information (physical, academic, social) they used in describing children as well as the specific categories of information (family background, teacher comments, etc.) they referred to. In addition, the categories of information that teachers had acquired but did not use in describing children were labeled "discarded information" and were itemized. The results of this

Table 23

Comparison of Simulation Task to Normal Classroom Planning

	Second Grade (N=20)	Fifth Grade (N=20)
Types of Difference *		
More information or different kind of information used in simulation task	3	5
Normally avoid so much preliminary information, or try to get first-hand information (give own tests, etc.)	10	9
Normally talk to previous teacher or rely on his/her recommendation	4	6
Normally plan/group by teacher committee, not alone	2	1
Basically similar	2	2
Amount of Difference		
Major Differences	12	9
Minor Differences	4	7
Little or No Difference	3	4
No Response	1	0

*Some teachers mentioned more than one type of difference.

Table 24

Areas, Types, and Amounts of Information Requested

Mean Numbers by Grade Level

	Second Grade (N=20)	Fifth Grade (N=20)
Number of Questions Asked	6.50	5.80
Areas of Information Requested		
Physical	.50	.50
Academic	2.40	2.75
Social (school)	.90	.70
Social (family)	.85	.30
Number of Different Areas of Information Requested	2.35	2.15
Type of Information Requested		
Teacher Comments	.85	.80
Standardized Tests	1.00	1.30
Other Written Records	4.20	3.45
"See the Child"	.15	.05
Breadth of Information Requested (Number of Categories Searched)	5.05	5.30
Depth of Information Requested (Number of Questions Asked Within a Single Category)	1.27	1.11

Table 25

Specific Categories Inquired About*

Total Numbers of Questions Asked

	Second Grade (N=20)	Fifth Grade (N=20)
Photographs	4	6
Family Background	20	12
Teacher Comments	20	22
Report Cards	8	3
Health and Attendance	13	12
Achievement Tests	16	18
IQ Tests	3	10
Psychological Reports	10	5
Sociometric Data	1	1
Previous Reading Programs	22	18
Parent Conferences	4	0
Special Interests	3	1
Not Answerable	13	11

*Note that a teacher could ask more than one question related to a given category.

analysis are presented in Tables 26 and 27. The difference between second and fifth grade teachers' use of information in the social area (see Table 26) is more marked than the difference in their collection of such information (see Table 24). There are few differences in teachers' use of specific categories of information (see Table 27), except that slightly more second grade teachers referred to family background and teacher comments in describing children, while slightly more fifth grade teachers referred to achievement tests. Fifth grade teachers were more apt to discard (or not refer to) information from teacher comments, while second grade teachers were much more apt to discard information from psychological reports.

In general, teachers referred to several different categories of information in describing the children. The overall mean was 3.45 categories used, with almost no difference noted between second and fifth grade teachers in this respect.

In describing the programs they would provide for the pupils in the simulation task, teachers noted how they would group pupils and what materials and support services they would use. There are some differences between second and fifth grade teachers in the plans they present in these program descriptions (see Table 28). For example, fifth grade teachers tended to plan for three reading groups, while second grade teachers tended to plan for four groups. No second grade teachers planned individualized programs, but two fifth grade teachers did. Most second grade teachers planned to use a basal series plus other, supplementary materials, as did a slightly smaller majority of fifth grade teachers. But more fifth than second grade teachers planned not to use any basal series. Second grade

Table 26

Number of Teachers Using Certain Areas of Information to Describe Children *

	Second Grade (N=20)	Fifth Grade (N=20)
Physical	7	6
Academic	15	18
Social (school)	18	14
Social (home)	14	9

*NOTE: A given teacher could use several areas at once in describing a child.

Table 27

Number of Teachers Using and Discarding Specific Categories of Information

	Used		Discarded	
	Second Grade (N=20)	Fifth Grade (N=20)	Second Grade (N=20)	Fifth Grade (N=20)
Family Background	15	11	0	0
Teacher Comments	16	13	2	5
Report Cards	6	2	2	1
Health and Attendance	6	6	5	6
Achievement Tests	10	13	4	5
IQ Tests	7	7	0	2
Psychological Reports	0	2	9	3
Sociometric Data	0	1	1	0
Previous Reading Programs	11	13	5	5
Parent Conferences	0	0	3	0
Special Interests	2	0	1	1

Table 28

Program Descriptions

Number of Teachers Planning to Use Particular Procedures

	Second Grade (N=20)	Fifth Grade (N=20)
Grouping Procedures		
Two Groups	3	2
Three Groups	6	11
Four or More	9	5
Individualized	0	2
Unclear	2	0
Use of Basal Series		
Basal Series Only	3	3
Basal Series Plus	14	11
No Basal Series	2	6
No Mention	1	0
Use of Other Materials*		
Reading Kits (e.g., SRA)	11	12
Contracts	2	3
Centers	8	4
Trade Books	7	7
Use of Support Services		
Send Pupils Out to Team or Specialist	7	8
Use Paraprofessional or Parent Tutor	7	3
Use Peer Tutor	7	1

*Note that some teachers plan to use more than one type of material or support service.

teachers planned to use learning centers and tutors (both adults and peers) more often than did fifth grade teachers. Most teachers described a reading program that included a variety of approaches, but there were three second grade teachers and six fifth grade teachers that only planned to use one kind of instructional material for the teaching of reading.

In brief follow-up interviews, teachers were asked to characterize their normal reading program and indicate the changes that an observer might expect to see in that program over a two-month period. Teachers' descriptions of their normal reading program did not differ much from their descriptions of the programs they had planned for the data bank pupils. This suggests that the simulation task is a valid representation of teachers' actual planning procedures.

In discussing expected observable changes in their programs teachers mentioned changes in group placement (nineteen teachers), changes in materials being used (sixteen teachers), and children becoming more independent of the teacher (seven teachers). There was no difference between second and fifth grade teachers in the frequency of mention of these expected changes.

While the foregoing discussion of Tables 23 through 28 has identified some differences between second and fifth grade teachers, it is important to note that there are very strong similarities in response between the two grade levels.

Comparative data. When teacher responses to the long-term diagnostic task are organized according to average pupil gain scores on the Experimental Teaching Units, a few significant differences are noted. In comparing the simulation task to their normal planning procedure, teachers of high and low pupil gain scores more frequently mentioned that they normally sought information or advice from their pupils' previous teacher in planning a reading program (p = .07), as shown in Table 29.

In seeking information from the data bank teachers of high and low pupil gain scores were remarkably similar in the areas they requested information about (see Table 30). When requests for information are considered by specific category, some differences that approach significance are found (see Table 31). Second grade teachers with low pupil gain scores show a tendency to request information about family background and parent conferences more frequently than their counterparts with high pupil gain scores. Fifth grade teachers with high pupil gain scores show a tendency to request psychological information and IQ test data more frequently than their fellows with low pupil gain scores.

When teachers' questions are categorized as broad (covering more than one category of information) or specific (asking for information within a single category), some interesting differences appear (see Table 32). Second grade teachers with low pupil gain scores asked broad questions significantly more frequently than those with high pupil gain scores. Neither of these differences held for fifth grade teachers, however.

The first question teachers asked tended to be specific (thirty teachers) rather than broad (ten teachers). When the specific first questions of teachers are analyzed as to content, it is apparent that achievement and previous reading experiences are the information that most teachers want (see Table 33). There are no apparent differences between teachers of high and low pupil gain score with regard to the content of the first question asked.

Table 29

Comparing the Simulation Task to Normal Procedures

Responses Organized by Pupil Gain Scores

Used More Information in Simulation Task

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	1	9
Low Pupil Gain Scores (N=10)	0	10

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	1	9
Low Pupil Gain Scores (N=10)	3	7

Normally Avoid So Much Preliminary Information

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	2	8
Low Pupil Gain Scores (N=10)	4	6

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	2	8

Normally Get First-Hand Information (Test, Observe)

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	1	9

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	2	8
Low Pupil Gain Scores (N=10)	1	9

Normally Talk to Previous Teacher or Rely on His/Her Recommendation

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	2	8
Low Pupil Gain Scores (N=10)	2	8

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	1	9
Low Pupil Gain Scores (N=10)	5	5

Fisher's Exact Test, p = .07043
df = 1.

Noted Major Versus Minor Difference

	Second Grade	
	Major	Minor
High Pupil Gain Scores (N=10)	7	3
Low Pupil Gain Scores (N=10)	5	4

	Fifth Grade	
	Major	Minor
High Pupil Gain Scores (N=10)	5	5
Low Pupil Gain Scores (N=10)	4	6

Table 30

Areas of Information Requested

Organized By Pupil Gain Scores

Physical Information

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	5	5

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	4	6

Academic Information

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	9	1
Low Pupil Gain Scores (N=10)	10	0

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	10	0
Low Pupil Gain Scores (N=10)	10	0

Social Information (School)

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	5	5

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	4	6

Social Information (Family)

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	6	4

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	2	8

Table 31

Specific Categories of Information Requested

Organized by Pupil Gain Scores

Family Background

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	9	1

Fisher's Exact Test, p = .15170
df = 1.

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	5	5

Parent Conferences

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	0	10
Low Pupil Gain Scores (N=10)	3	7

Fisher's Exact Test, p = .10526
df = 1.

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	0	10
Low Pupil Gain Scores (N=10)	0	10

I.Q. Tests

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	4	6

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	3	7

Fisher's Exact Test, p = .18492
df = 1.

Psychological Reports

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	5	5
Low Pupil Gain Scores (N=10)	4	6

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	1	9

Fisher's Exact Test, p = .15179
df = 1.

Table 32

Type of Questions Asked

Organized by Pupil Gain Scores

Asked One or More Broad Questions

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	2	8
Low Pupil Gain Scores (N=10)	9	1

Fisher's Exact Test, p = .00274
df = 1.

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	4	6

Asked One or More Specific Questions

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	7	3
Low Pupil Gain Scores (N=10)	6	4

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	7	3
Low Pupil Gain Scores (N=10)	8	2

Asked Both Broad and Specific Questions

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	1	9
Low Pupil Gain Scores (N=10)	6	4

Fisher's Exact Test, P = .02864, df =1

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	4	6

Table 33

Number of Teachers Asking for Specific Kinds of Information

On The First Question

Organized by Pupil Gain Scores

		Second Grade		Fifth Grade	
Content of Specific First Questions (N=30)	TOTALS	High Pupil Gain Scores (N=8)	Low Pupil Gain Scores (N=6)	High Pupil Gain Scores (N=7)	Low Pupil Gain Scores (N=9)
Achievement	9	2	1	2	4
Previous Reading Program	7	3	1	1	2
Family Background	4	1	2	0	1
Health and Attendance	2	1	1	0	0
Teacher Comments	2	0	0	1	1
Photographs	4	0	0	3	1
Not Answerable	2	1	1	0	0

It was expected from the literature review that there might be differences between teachers of high and low pupil gain scores related to the number of questions asked or the breadth and depth of information searched for. This did not prove to be the case, as is apparent from Table 34. Fifth grade teachers with high pupil gain scores did search slightly more categories and also discarded more information than fifth grade teachers with low pupil gain scores, but the differences were not extreme enough to be significant when the two-tailed t-test was applied. Second grade teachers with low pupil gain scores tended to go into depth (ask two or more questions in a category) more than other teachers, but again this difference was not significant.

It is interesting to note that second grade teachers with low pupil gain scores had consistently higher mean scores on amount of information requested and used (Table 34) than second grade teachers with high pupil gain scores. This seems to repeat the trend found in the study of teacher perceptions of classroom interaction (Morine and Vallance, 1975), where teachers with low pupil gain scores tended to identify more items affecting their decisions and therefore seemed to be collecting more information during classroom interaction.

When the categories of information used to describe children are organized according to pupil gain scores, an interesting pattern emerges. Table 35 shows that teachers with high pupil gain scores tended to disregard the instructions to write thumbnail sketches more often than those with low pupil gain scores. In fact, they were the only ones who did so. For second grade teachers this difference approached significance ($p = .11$). This could be interpreted to suggest that teachers with high pupil gain

Table 34

Amount of Information Requested and Used

Mean Scores Organized by Pupil Gain Scores

	Second Grade		Fifth Grade	
	High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=10)	High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=10)
Number of Questions Asked of Data Bank	5.5	7.5	6.2	5.4
Breadth of Information Sought (Number of Categories Searched)	4.6	5.5	5.8	4.8
Depth of Information Sought (Number of Categories with Two or More Questions)	.7	1.5	.5	.7
Breadth of Information Used (Number of Categories Used to Describe Children)	3.4	3.9	3.5	3.4
Amount of Unused Information (Number of Categories Searched, then Discarded)	1.5	2.4	2.4	1.7

Table 35

Number of Teachers Using Specific Types of Information

To Describe Children

Organized According to Pupil Gain Scores

Wrote Thumbnail Sketches, as Requested

	Second Grade Yes	No
High Pupil Gain Scores (N=10)	7	3
Low Pupil Gain Scores (N=10)	10	0

Fisher's Exact Test, p = .10526
df = 1.

	Fifth Grade Yes	No
High Pupil Gain Scores (N=10)	9	1
Low Pupil Gain Scores (N=10)	10	0

Family Background

	Second Grade Yes	No
High Pupil Gain Scores (N=7)	6	1
Low Pupil Gain Scores (N=10)	9	1

	Fifth Grade Yes	No
High Pupil Gain Scores (N=9)	6	3
Low Pupil Gain Scores (N=10)	5	5

Health and Attendance

	Second Grade Yes	No
High Pupil Gain Scores (N=7)	5	2
Low Pupil Gain Scores (N=10)	1	9

Fisher's Exact Test, p = .01638
df = 1.

	Fifth Grade Yes	No
High Pupil Gain Scores (N=9)	4	5
Low Pupil Gain Scores (N=10)	2	8

Previous Reading Program

	Second Grade Yes	No
High Pupil Gain Scores (N=7)	5	2
Low Pupil Gain Scores	6	4

	Fifth Grade Yes	No
High Pupil Gain Scores (N=9)	5	4
Low Pupil Gain Scores	8	2

Achievement Tests

	Second Grade Yes	No
High Pupil Gain Scores (N=7)	5	2
Low Pupil Gain Scores (N=10)	5	5

	Fifth Grade Yes	No
High Pupil Gain Scores (N=9)	5	4
Low Pupil Gain Scores (N=10)	8	2

I.Q. Tests

	Second Grade Yes	No
High Pupil Gain Scores (N=7)	3	4
Low Pupil Gain Scores (N=10)	4	6

	Fifth Grade Yes	No
High Pupil Gain Scores (N=9)	5	4
Low Pupil Gain Scores (N=10)	2	8

scores are somewhat more independent in their response to direction or suggestion. For those teachers who did complete the description, second grade teachers with high pupil gain scores refer more to information on pupil health and attendance (p = .02). There is some tendency for fifth grade teachers with low pupil gain scores to use information on previous reading programs and previous achievement test results in greater proportions than fifth grade teachers with high pupil gain scores. But these trends are not stastically significant. The types of information that teachers keep in mind about pupils while planning instructional programs, therefore, do seem to be slightly different for different groups.

Related to the information teachers used is the information that they requested, but did not include in their thumbnail sketches, which we have labeled "discarded" information. The numbers of teachers discarding information were too small for tests of significance to be useful. In general, teachers discarded categories of information that gave them little pertinent data regarding pupil differences. Second grade teachers with low pupil gain scores tended to discard information they had collected about health and attendance more frequently than did second grade teachers with high pupil gain scores. This was also true of fifth grade teachers. Second grade teachers with low pupil gain scores were the only ones to collect information from parent conferences, and all of them discarded it. Fifth grade teachers with high pupil gain scores tended to discard information from psychological reports more frequently than did fifth grade teachers with low pupil gain scores. (They had also requested this information more frequently, as noted in Table 31. It may be well to note here that psychological reports were only available on a few children, as would be typical in any class). Fifth grade teachers with high pupil gain scores also tended to discard information on previous reading programs more frequently than those with low pupil gain scores.

Perhaps of greater importance than the types of information requested, or used, or discarded is how effectively teachers used the information they received. In addition to writing thumbnail sketches about the pupils, teachers were asked to plan a reading program for them, and in the course of this task they identified the reading level of each child in relation to the average of the grade level at which they were working. Some very interesting patterns are evident when the accuracy of grade level placement is examined according to pupil gain scores. Teachers as a whole tended to be fairly accurate in their placements (see Table 36), and all second grade teachers tended to err on the side of placing children too high. But fifth grade teachers with high pupil gain scores placed children too high more frequently (p = .05), while fifth grade teachers with low pupil gain scores tended to place children too low (p = .17).

When teachers' descriptions of the reading programs they would provide for pupils in the data bank are organized according to pupil gain scores, there are no differences evident in use of support services, but there are minor differences noted in grouping practices, and some strong differences in use of instructional materials. Table 37 demonstrates clearly that teachers of high and low pupil gain scores at both grade levels are equally apt to plan to send pupils out to a team member or a reading specialist, or to use adult or peer tutors. Second grade teachers plan to use tutors more frequently than fifth grade teachers, but there are no differences related to pupil gain scores. This planning for tutors may be an effect of the

Table 36

Teacher Accuracy of Pupil Placement by Reading Level

Mean Scores Organized by Pupil Gain Scores

	Second Grade		Fifth Grade	
	High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=10)	High Pupil Gain Scores (N=10)	Low Pupil Gain Scores (N=10)
Number of Children Placed Accurately (14 children in data bank)	12.9	12.9	12.4	12.5
Number of Children Placed Too High	.8	.8	.7	.2 [a]
Number of Children Placed Too Low	.3	.3	.9	1.3 [b]

a - two-tailed t-test, $t = 2.24$, $p < .10$, $df = 18$.
b - two-tailed t-test, $t = 1.50$, $p < .20$, $df = 18$.

Table 37

Number of Teachers Planning to Use Support Services

Organized by Pupil Gain Scores

Send Pupils Out to Team Member or Reading Specialist

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	4	6

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	4	6

Use Paraprofessional or Parent Tutor

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	4	6

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	1	9
Low Pupil Gain Scores (N=10)	2	8

Use Peer Tutor

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	3	7

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	0	10
Low Pupil Gain Scores (N=10)	1	9

California state-funded Early Childhood Education Program.

With regard to grouping practices planned, there are some slight differences (see Table 38). Teachers with low pupil gain scores at both grade levels are the only ones to plan a reading program using only two groups (or levels) for instruction. On the other hand, fifth grade teachers with low pupil gain scores are the only ones to plan completely individualized programs.

As part of their program descriptions almost all teachers identified the instructional materials they would plan to use with the data bank pupils. Second grade teachers of high and low pupil gain scores showed almost no differences in their planning with regard to instructional materials (see Table 39), but fifth grade teachers showed marked differences. Fifth grade teachers with high pupil gain scores were more apt to mention use of a basal series only (i.e., no mention of other materials) than those with low pupil gain scores. They were less apt to mention use of reading kits, such as SRA, or of learning centers or trade books. The first two differences were significant ($p = .01$ and $p = .04$) but the third was not ($p = .17$). Taken together this seems to suggest that fifth grade teachers with high pupil gain scores planned to vary their use of instructional materials for reading much less than their counterparts with low pupil gain scores.

An interesting additional sidelight is that most teachers neglected to describe the teaching procedures they would use, as well as the instructional materials. This was not true for second grade teachers with low pupil gain scores (see Table 39), who described their teaching procedures much more frequently than any other group ($p = .08$).

Table 38

Number of Teachers Planning to Group Pupils for Reading Instruction in Various Ways

Organized By Pupil Gain Scores

		Two Groups	Three Groups	Four Groups or More	Indivi-dualized	Unclear
Second Grade	High Pupil Gain Scores (N=10)	0	4	5	0	1
	Low Pupil Gain Scores (N=10)	3	2	4	0	0
Fifth Grade	High Pupil Gain Scores (N=10)	0	7	3	0	0
	Low Pupil Gain Scores (N=10)	2	4	2	2	0

Table 39

Number of Teachers Planning to Use Various Instructional Materials

Organized by Pupil Gain Scores

Use of Basal Series

		Basal Series Only	Basal Series Plus Others	No Basal Series	No Response
Second Grade	High Pupil Gain Scores (N=10)	1	6	2	1
	Low Pupil Gain Scores (N=10)	2	8	0	0
Fifth Grade	High Pupil Gain Scores (N=10)	3	4	3	0
	Low Pupil Gain Scores (N=10)	0	7	3	0

Use of Reading Kits (e.g., SRA)

Second Grade	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	5	5

Fifth Grade	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	9	1

Fisher's Exact Test, p = .00988
df = 1.

Use of Centers

Second Grade	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	4	6

Fifth Grade	Yes	No
High Pupil Gain Scores (N=10)	0	10
Low Pupil Gain Scores (N=10)	4	6

Fisher's Exact Test, p = .04334
df = 1.

Use of Trade Books

Second Grade	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	4	6

Fifth Grade	Yes	No
High Pupil Gain Scores (N=10)	2	8
Low Pupil Gain Scores (N=10)	5	5

Described Teaching Procedure to be Used as Well as Materials

Second Grade	Yes	No
High Pupil Gain Scores (N=10)	2	8
Low Pupil Gain Scores (N=10)	6	4

Fisher's Exact Test, p = .08490
df = 1.

Fifth Grade	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	3	7

In characterizing their own reading programs during brief interviews at the end of the long-term diagnostic task, teachers of high and low pupil gain scores differed somewhat in their discussion of expected observable changes in their classrooms over a two-month period. Second grade teachers with low pupil gain scores were rather more apt to mention changes in materials being used (see Table 40), though this difference was not statistically significant. Second grade teachers with high pupil gain scores were much more apt to mention that children in their classes would become noticeably more independent of the teacher over a two-month period ($p = .04$).

Table 40

Number of Teachers Mentioning Expected Observable Changes in Their Classrooms

Organized by Pupil Gain Scores

Changes in Group Placement

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	6	4
Low Pupil Gain Scores (N=10)	5	5

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	5	5
Low Pupil Gain Scores (N=10)	3	7

Changes in Materials Being Used

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	3	7
Low Pupil Gain Scores (N=10)	6	4

Fisher's Exact Test, p = .18492
df = 1.

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	3	7

Children Becoming More Independent of Teacher

	Second Grade	
	Yes	No
High Pupil Gain Scores (N=10)	4	6
Low Pupil Gain Scores (N=10)	0	10

Fisher's Exact Test, p = .04334
df = 1.

	Fifth Grade	
	Yes	No
High Pupil Gain Scores (N=10)	2	8
Low Pupil Gain Scores (N=10)	1	9

Summary of Chapter Four

Teachers' written lesson plans for two special lessons were analyzed, along with their responses to interview questions about post-lesson planning and evaluation. In addition, teacher responses to two simulation tasks were analyzed. These two tasks involved diagnosing pupil reading difficulties from a videotape of pupils reading aloud, and planning a long-term reading program for a group of pupils based on their written records in a data bank of information.

In writing their lesson plans, teachers tended to be fairly specific, use outline form, state non-behavioral goals, and make little or no mention of pupils' academic preparation for the lesson, procedures to be used for evaluating the lesson, or possible alternative procedures for instruction. Most teachers planned specifically to make use of pupil ideas in reading lessons, but less than half did in math lessons. More teachers prepared worksheets for pupil use in math lessons than in reading lessons.

Second grade teachers with high pupil gain scores tended to make fewer general statements, more specific statements, more statements about instructional process, and more specific statements about data selection in their lesson plans than did second grade teachers with low pupil gain scores. Fifth grade teachers with high and low pupil gain scores exhibited little difference in their lesson plans. In discussing plans for follow-up reading lessons second grade teachers with high pupil gain scores mentioned cognitive considerations significantly more frequently than second grade teachers with low pupil gain scores. No differences related to pupil gain scores were noted for fifth grade teachers. When considering possible changes in their math lessons after viewing a videotape of other teachers' lessons on the same topic, second grade teachers with low pupil gain scores tended to plan changes more often than second grade teachers with high pupil gain scores. The changes mentioned by second grade teachers with low pupil gain scores included teaching shorter lessons and covering less content, but no other groups mentioned this type of change.

No significant differences were found in teachers' ability to diagnose pupil reading difficulties from a videotape prepared by ETS, although second grade teachers with low pupil gain scores tended to be more accurate in their diagnoses than the other three groups of teachers. This finding suggests that this particular simulation task may have some validity problems. In comparing the simulation task to normal practice, teachers at both grade levels with high pupil gain scores more often noted that they normally used more time and variety of situations in diagnosing pupils' reading problems.

When teachers used a data bank of written records to plan a reading program for a group of "new pupils," teachers of high and low pupil gain scores tended to ask for similar kinds of information, but second grade teachers with low pupil gain scores asked more broad or general questions than their counterparts with high pupil gain scores. This difference was not true for fifth grade teachers. Teachers with high pupil gain scores were the only ones to disregard the request to write brief descriptions of the data bank pupils, and for second grade teachers this difference approached significance.

In identifying pupils' reading levels on the basis of written records, teachers as a whole were fairly accurate. All second grade teachers tended to err (when they did err) by placing children too high, but fifth grade teachers differed. Those with high pupil gain scores placed children too high more frequently, while those with low pupil gain scores tended to place children too low.

In planning reading programs for the data bank pupils, teachers differed little in grouping practices or use of support services, but there were differences in use of instructional materials. Fifth grade teachers with high pupil gain scores were less apt to plan for variation in use of instructional materials than their colleagues with low pupil gain scores. In characterizing their own real reading programs, teachers tended to say that they were basically similar to those they planned for pupils in the simulation task, which suggests that there is some validity to this task. Second grade teachers with high pupil gain scores were much more apt to mention that children in their real classes would become observably more independent of the teacher over a two-month period. In comparing the data bank task to their normal classroom procedures for long-term planning and diagnosis, teachers differed very little. However, fifth grade teachers with low pupil gain scores more frequently mentioned that they normally sought information or advice from pupils' previous teachers in planning a reading program.

In general there were more differences between second grade teachers of high and low pupil gain scores than between fifth grade teacher groups in their response to the tasks in this study.

CHAPTER FIVE

VARIABLES FOR FURTHER STUDY

Some of the findings of this study of teacher planning may be rather disturbing to some educators. How is it possible that teachers with high pupil gain scores show little more tendency to use behavioral objectives than do teachers with low pupil gain scores? Why is there no difference in the ability of teachers with high and low pupil gain scores to diagnose reading difficulties in a simulation task? It could prove interesting to speculate on these surprising and, some may think, negative findings. But at this stage it is probably more productive to explore the positive findings instead.

There are four variables for further study that emerge from the findings of this study on teacher planning. Each of them is supported by three or more significant findings. They are: teacher processing of specific vs. general information; teacher perspectives that emphasize pupil potential for change; teacher attention to cognitive considerations and instructional process; teacher production and use of instructional materials.

Each of these variables seems to help to distinguish between teachers with high and low pupil gain scores. Each of them suggests questions for further study.

Teacher Processing of Specific vs. General Information

Four separate significant findings support the suggestion that teacher processing of specific vs. general information is a variable worth further study. These findings derive from the Lesson Planning Task and the Data Bank Task, and all relate to second grade teachers only. In writing their match lesson plans, second grade teachers with high average pupil gain scores made more specific statements than did second grade teachers with low average pupil gain scores ($p<.10$;Table 7). Second grade teachers with low pupil gain scores made more general statements in writing their math lesson plan ($p<.10$;Table 7). In the Data Bank Task, second grade teachers with low average pupil gain scores asked more broad (general) questions than did their counterparts with high pupil gain scores ($p = .003$; Table 32). Further, more second grade teachers with low pupil gain scores used a mixture of broad and specific questions, rather than sticking to one kind ($p = .03$; Table 32).

These four findings suggest the possibility that in their planning second grade teachers with high pupil gain scores seek general information as input less often and provide specific information as output more often than do their colleagues with low pupil gain scores. Some questions for further study would be:

1. Do fifth grade teachers really differ from second grade teachers in this respect?
2. Can the tendency of teachers with low pupil gain scores to seek more general information be detected in other aspects of teacher planning, in addition to the process of examining written records?
3. Does the tendency for second grade teachers with high pupil gain scores to provide more specific information in math lesson plans carry into other subject matter areas? To lesson plans produced under normal conditions? To topics that are familiar, rather than new, to the teacher?
4. Can the tendencies of teachers with low pupil gain scores to seek more general information and the tendency of teachers with high

pupil gain scores to provide more specific information be detected in interactive information processing as well as in teacher planning?

Teacher Perspectives that Emphasize Pupil Potential for Change

A variety of findings from the Data Bank Task can be combined under the general heading of tending to emphasize pupil potential for change. Four of these findings show statistically significant differences, one approaches significance, and five merely show trends. These findings relate to both second and fifth grade teachers.

First of all, there seems to be a strong tendency for fifth grade teachers with low pupil gain scores to concentrate on a pupil's past record of performance, rather than on his potential. In writing descriptions of data bank pupils these teachers more often used information from previous reading experiences and achievement test records (Table 35). In discussing their own procedure for diagnosing pupils' reading ability, they more often note that it is their custom to talk to a pupil's previous teacher to get recommendations ($p = .07$; Table 29). Fifth grade teachers with high pupil gain scores, on the other hand, tend to more often use information from IQ tests to describe data bank pupils (Table 35). IQ's are generally assumed to provide more information about potential ability than do achievement tests.

In addition, fifth grade teachers with high pupil gain scores may tend to view pupil potential in a more positive light. In assigning data bank pupils to specific reading levels, fifth grade teachers with high pupil gain scores tended to err by placing children too high more often than did those with low pupil gain scores ($p = .05$; Table 36). Fifth grade teachers with low pupil gain scores erred more often by placing children too low (p = .17; Table 36).

Second grade teachers with low pupil gain scores seem to concentrate on aspects of the child which are difficult or impossible to change, specifically aspects related to family life. In collecting information from the data bank, second grade teachers with low pupil gain scores were the only ones to ask for information from parent conference reports (p = .11; Table 31). In writing descriptions of data bank pupils, second grade teachers with low pupil gain scores used information on family background more often than those with high pupil gain scores (Table 35). Second grade teachers with high pupil gain scores, on the other hand, used information on health and attendance more frequently (p = .02; Table 35). A child's health and attendance is something that the school can help to improve, in most cases. Certainly it is more amenable to change than family background.

Finally, second grade teachers with high pupil gain scores evidenced their expectations of pupil change when they identified observable changes that occurred in their own classrooms. They noted their expectations that children would become more independent of the teacher more frequently than did second grade teachers with low pupil gain scores (p = .04; Table 40).

Together, all of these findings support the possible importance of the variable of teacher perspectives that emphasize pupil potential for change. Questions for further study in relation to this variable include:

1. Would direct measures of a teacher's tendency to emphasize pupil potential for change distinguish between teachers who are more and less effective over longer periods of time? Some data from Phase II of the BTES Study is mildly supportive of this idea (McDonald, et al, 1975).

2. Do teachers with high and low pupil gain scores differ in their tendency to emphasize their own potential for change?
3. Would teacher verbal descriptions of pupils in their own classrooms demonstrate the same tendency for teachers with low pupil gain scores to emphasize past performance or unchangeable characteristics?

Teacher Attention to Cognitive Considerations and Instructional Processes

The responses of pupils to the Pupil Concepts of Teaching Task in Study B (Teacher and Pupil Perceptions of Classroom Interaction) indicated that pupils were attentive to cognitive aspects of teaching, and to the instructional process in general. We therefore studied teacher responses to planning tasks to determine whether the variable of teacher attention to cognitive considerations and instructional processes differentiated between teachers of high and low pupil gain scores. Four findings relate to this variable. Three are significant and one approaches significance. All derive from the Lesson Planning Task, and they involve both fifth and second grade teachers.

Second grade teachers with high pupil gain scores make more statements in their reading lesson plans that relate to categories of instructional process than do second grade teachers with low pupil gain scores ($p < .10$; Table 7). Fifth grade teachers with high pupil gain scores note pupil background and preparation for the lesson more often than fifth grade teachers with low pupil gain scores in both their reading and math lesson plans. For the math lesson this difference approaches significance ($p = .11$; Table 6). This aspect of planning is an important cognitive consideration.

A cognitive aspect of instructional process that attracted pupil attention particularly in Study B was data selection. Second grade teachers with high pupil gain scores made more specific statements regarding data selection in planning their math lessons than did those with low pupil gain scores (p =.07; Table 8). They also made fewer statements regarding content focus in their reading lesson plans than did second grade teachers with low pupil gain scores (p =.07; Table 8). This seems to suggest that second grade teachers with high pupil gain scores in writing lesson plans attend slightly more to instructional process, rather than content focus, in comparison to teachers with low pupil gain scores.

Second grade teachers with high pupil gain scores also mention cognitive considerations more in discussing their plans for follow-up lessons (p =.07; Table 15). It is interesting to note that this focus on cognition is not to the exclusion of the affective area, for these teachers also mentioned affective considerations more than second grade teachers with low pupil gain scores, both in discussing alternatives for their original lesson (p =.18; Table 15) and in planning follow-up lessons (p =.18; Table 15).

These findings taken together suggest that the variable of teacher attention to cognitive considerations and instructional process is important for further study of teacher planning as well as of interactive decision making. Some questions for further study include:

1. What are the relationships between teacher planning statements relating to cognitive aspects of instructional process and their interactive behavior relating to the same aspects: For example, do teachers with high pupil gain scores demonstrate more skill

at data selection and organization in their actual interactive presentations?

2. What are the various ways in which teachers identify the content focus for a lesson (i.e., "fix it in their heads"), and do teachers with high and low pupil gain scores use different techniques for this (e.g., statement of objectives vs. pupil worksheets)?
3. Are there differences between teachers with high and low pupil gain scores in their attention to pupil background and preparation for lesson content in their normal day-to-day lesson planning?

Teacher Production and Use of Materials

There are several rather surprising findings that can be grouped together under the heading of teacher production and use of materials. They relate specifically to reading instruction and include findings for both second and fifth grade teachers. Three of the findings are significant and two merely show trends.

Second grade teachers with high pupil gain scores prepared fewer worksheets for use in their reading lessons than did those with low pupil gain scores (p.81). This may possibly indicate that they are less inclined in general to prepare their own instructional materials for reading. In describing their normal classroom procedures (following completion of the Data Bank Task), second grade teachers with low pupil gain scores were more apt to describe their teaching procedures as well as the instructional materials they used, than were second grade teachers with high pupil gain scores (p =.08; Table 39). It may be that second grade teachers with high pupil gain scores have a greater tendency to think that the instructional materials themselves define the teaching procedure used.

Fifth grade teachers with low pupil gain scores, in describing their normal classroom procedures, more often mentioned that they used reading kits, such as SRA (p =.01; Table 39), and/or learning centers (p =.04; Table 40), and/or trade books (p =.17; Table 40) as part of their instructional program than did fifth grade teachers with high pupil gain scores. This would seem to indicate that teachers who provide more variety of instructional materials in reading get less pupil growth in reading.

These findings tend to corroborate the findings in several other recent studies (Hall, 1975; Stallings, 1975; Brophy, 1975), which indicate that children achieve better in reading when teachers use one reading program consistently, in the way it was designed, without a lot of additional teacher inventions (provided the reading program used has a linguistic base). It would seem therefore, that the variable of teacher use and production of instructional materials is worth further study. Some questions to be pursued include:

1. Are teachers also more effective in subject areas other than reading when they concentrate their efforts on one well-designed program, rather than using a variety of instructional materials?
2. Do teachers with high and low pupil gain scores differ in their tendency to prepare "homemade" materials in subject areas other than reading in normal classroom instruction?
3. Are teachers in general more or less apt to prepare their own instructional materials when the subject matter topic to be taught is relatively unfamiliar to them? Do

teachers with high and low pupil gain scores differ in this respect?

Relationships Between Teacher Planning and Teacher Pupil Perceptions of Classroom Interaction

As we noted in explaining the design of this study, two studies were conducted in tandem, with the expectation that some preliminary ideas might be developed concerning the relationship between preactive and interactive decision making. The study of teacher and pupil perceptions of classroom ineraction (Special Study B) suggested two major variables for further study; thinking processes and focus of attention. Certain aspects of each of these variables also stand out as recommended areas for further study based on our investigation of teacher planning (Special Study C). The specific variables that seem to be potentially productive, based on supportive findings in both studies are: thinking in generalities and attention to cognitive aspects of the lesson.

Thinking in Generalities

In their daily planning, second grade teachers with low average pupil gain scores made more general statements in writing math lesson plans ($p < .10$; Table 7) while second grade teachers with high pupil gain scores made more specific statements ($p < .10$; Table 7). In their long-term (simulation) planning, second grade teachers with low pupil gain scores asked more general (broad) questions in seeking information about "new pupils" than did those with high pupil gain scores ($p = .003$; Table 32). This apparent relationship between teacher effectiveness (as measured by average pupil gain scores in short Experimental Teaching Units) and teacher tendency to think in generalities vs. specificities while planning for instruction was also evidenced to some degree in teacher perceptions of classroom interaction.

When teachers categorized pupils according to teacher observations of pupil behavior during a lesson, teachers with high pupil gain scores at both second and fifth grade levels showed a tendency (non-significant) to use situational bases (i.e., bases specific to that lesson, rather than referring to general pupil characteristics) more often than teachers with low pupil gain scores (Table 10, Study B). Also, teachers with high pupil gain scores used pupil performance on a task within the lesson (another example of collecting specific information) as a basis for categorizing pupils more frequently than teachers with low pupil gain scores. This difference approached significance ($p = .13$; Table 11, Study B).

In making judgments about the lessons of other teachers, observed on videotape, fifth grade teachers with low pupil gain scores made more categorical (vs. situational) statements than did fifth grade teachers with high pupil gain scores ($p < .05$; Table 21; Study B). This means that teachers with low pupil gain scores based their judgments on general rules about good teaching, while teachers with high pupil gain scores based their judgments on specific aspects of the instructional situation, such as age and ability of the pupils.

Taken together, these data seem to indicate that teachers with low pupil gain scores show a greater tendency to think in generalities both in their planning and in their perceptions of classroom interaction. Clearly, then, this is a variable that deserves further study.

Attention to Cognitive Aspects

In reviewing lessons that they taught and using their evaluation to plan follow-up lessons, second grade teachers with high pupil gain scores mentioned cognitive considerations more frequently than those with low pupil gain scores ($p = .07$; Table 15). In their daily planning teachers with high pupil gain scores also tended to pay attention to important cognitive aspects of lessons more often than teachers with low pupil gain scores. For example, fifth grade teachers with high pupil gain scores noted the pupil's academic preparation for the lesson more often in both their reading and math lesson plans. For the math lessons this approached significance ($p = .11$; Table 6). Second grade teachers with high pupil gain scores made more specific statements regarding data selection and organization in planning their math lesson ($p = .07$; Table 8). Data selection and organization refers to information related to cognitive content of the lesson that will be made available to pupils. This cognitive aspect of the lesson was one to which pupils were particularly alert when they were interviewed regarding their perceptions of classroom interaction (Study B).

This tendency for teachers with high pupil gain scores to attend more to cognitive aspects of the lesson in planning for daily instruction was also apparent in teacher perceptions of classroom interaction. In categorizing pupils after observing them during a lesson, teachers with high pupil gain scores used cognitive bases more frequently than teachers with low pupil gain scores ($p < .10$; Table 9; Study B).

Taken together, the importance of pupil and teacher attention to cognitive aspects of lessons seems clear. Teachers with high pupil gain scores focus on cognitive aspects more in their planning for lessons and in their attention to pupil behavior during lessons. Pupils of all ability levels were very alert to cognitive aspects of classroom interaction, although low ability pupils were less attentive than middle and high ability pupils. The variable of attention to cognitive aspects of lessons seems to be related to instructional effectiveness, and needs to be studied further.

Conclusion

This study was designed to explore two basic aspects of teacher planning in order to generate new variables for further study of teacher effectiveness. A "known sample" of teachers were interviewed individually and responded to several tasks designed to gather information about their procedures in planning for daily lessons, in diagnosing pupil difficulties in reading, and in long-term planning for reading instruction.

Several correlations were found between teacher responses to the various tasks and average pupil gain scores on Experimental Teaching Units. The correlations and trends found led to recommendations for further study of four variables: teacher processing of specific vs. general information; teacher perspectives that emphasize pupil potential for change; teacher attention to cognitive considerations and instructional process; teacher production and use of instructional materials.

When the findings of this study were compared to the findings of the coordinated study of teacher and pupil perceptions of classroom interaction, two variables were found to be important in both teacher planning and classroom interaction. These two variables are teacher tendency to think in generalities rather than specifics, and teacher attention to cognitive aspects of lessons. These two variables are teacher tendency to think in generalities rather than specifics, and teacher attention to cognitive aspects of lessons. These two variables are highly recommended for further study.

The purpose of this study was to examine a wide spectrum of variables in teacher planning in order to select the best possibilities for further study. Several of the variables that emerged should be very interesting to follow up. Of additional particular interest in this study was the purely descriptive information about teacher planning procedures. Hopefully, this aspect of the study will also receive further attention.

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APPENDIX A

CODING SYSTEMS

Part I.

Sample Codings:

Basic Category System

Sample Codings: Basic Category System

I. General Approach

A. Goals

1. Representative statements from Teacher Judgment Task
    a. He was leading toward basic directions (of arrows)
    b. I didn't feel any real direction or point to the lesson
    c. I'd like to know his objective
2. Representative statements from Stimulated Recall Task
    a. I wanted to be sure kids achieved the objective at the point I wanted
    b. From there I really only wanted to go on to letting them see ways to expand sentences.
3. Representative statements from Pupil Concepts of Teaching Task

B. Instructional Strategy

1. Representative statements from Teacher Judgment Task
    a. The kids are showing him the operations
    b. He wrote problems on the board and they had to figure out the answer
    c. The kids discover the operations
    d. The kids show how the arrows go
2. Representative statements from Stimulated Recall Task
    a. I violated the rules of using only cards - I talked too much
    b. That's the way I teach reading - It's called a "miscue approach"
3. Representative statements from Pupil Concepts of Teaching Task
    a. Write on board and leave them on board so you can look at them later
    b. Spelling test- gives you sentences- says them over if you need it

    c. Didnt' show them how to do the problems--didn't help them
    d. Kept giving problems and asking "what's this?"

C. Sequence of Procedures
  1. Representative statements from Teacher Judgment Task
    a. She started with "10 up", then let the kids go any direction
  2. Representative statements from Stimulated Recall Task
    a. I thought maybe we should do a couple of sentences before we got involved with the picture
    b. I was trying to decide whether to add more words to the sentence then act it out, or act it out first to see if they would get more ideas.
    c. I did this as preliminary for follow-up
  3. Representative statements from Pupil Concepts of Teaching Task

D. Teacher vs Pupil Structure
  1. Representative statements from Teacher Judgment Task
    a. He's giving them options
    b. She also structured
    c. The teacher structures the lesson for the pupil
  2. Representative statements from Stimulated Recall Task
    a. He had an idea he wanted to try out (a game) and the other children felt the same way - If he was willing to try, I was willing to let him do it.
  3. Representative statements from Pupil Concepts of Teaching Task
    a. Has free time if you get your work done - learn to get work done fast.
    b. No free time to do what you want or catch up
    c. Free time work has to be quiet so the others can finish and think.

E. Teacher Activity

   1. Representative statements from Teacher Judgment Task

      a. She talks a lot

   2. Representative statements from Stimulated Recall Task

      a. This is typical - I'm going around during seatwork

   3. Representative statements from Pupil Concepts of Teaching Task

      a. Gives us work to do
      b. Talking about certain things - sentences
      c. Writing numbers, and arrows on the chalkboard
      d. Teacher didn't have to write problems down

F. Pupil Activity

   1. Representative statements from Teacher Judgment Task

      a. They're working individually - there's no sharing
      b. There's physical involvement of the pupils

   2. Representative statements from Stimulated Recall Task

      a. Kelly was being more active than usual - decided then to get them up to underline words
      b. I had my own sentences but I wanted kids to write their own sentences
      c. They had expanded two simple sentences
      d. I started to read the sentence, then realized that I always have children read it.

   3. Representative statements from Pupil Concepts of Teaching Task

      a. We write stories about what we're doing
      b. We write stories about pictures
      c. Kids doing writing

G. Management/Control

1. Representative statements from Teacher Judgment Task

    a. He has good class control

2. Representative statements from Stimulated Recall Task

    a. Class was getting too noisy. I said "I can't go on" to get children to settle down

    b. I was passing out materials, so I said, "When you get it, put your name on it." - so they're busy doing something

    c. I realized they were still acting up and pointed out that someone couldn't hear.

    d. Usually I just say, "O.K., go on back to your seat"

3. Representative statements from Pupil Concepts of Teaching Task

    a. Principal is very strict if you get sent to office - makes you mad, not want to learn

    b. When kids are goofing around, she sends them outside to do their work without explaining - it makes them want to learn

    c. Have kids write something 100 times if they talk - helps them listen, but dumb thing to do

    d. Always telling them to do something - so they wouldn't be fidgety

H. Seating Arrangement

1. Representative statements from Teacher Judgment Task

    a. The kids are sitting in rows close to the board

2. Representative statements from Stimulated Recall Task

    a. Sometimes switching their seats will help, or putting them next to me.

    b. I usually position myself so I can reach to any child

    c. I was concerned about the seating of a few children so I moved a couple

3. Representative statements from Pupil Concepts of Teaching Task

i. Size, Composition of Group

1. Representative statements from Teacher Judgment Task

   a. There were 4 boys and 2 girls

2. Representative statements from Stimulated Recall Task

   a. With a large group, just a few children tend to participate so I decided to have a short sentence for each one so each one would participate

   b. There was such a variety in the group - I needed something that would interest most of them

3. Representative statements from Pupil Concepts of Teaching Task

   a. Reading - work in groups and then work alone - like working alone better

J. Pupil Outcomes

1. Representative statements from Teacher Judgment Task

2. Representative statements from Stimulated Recall Task

3. Representative statements from Pupil Concepts of Teaching Task

K. Teacher Style

1. Representative statements from Teacher Judgment Task

   a. He came on very strong - "Let me give you some problems"

2. Representative statements from Stimulated Recall Task

   a. I feign a "hard to hear response" so students will speak up. It's a technique I use

3. Representative statements from Pupil Concepts of Teaching Task

L. Other

   1. Representative statements from Teacher Judgment Task

      a. That's a good approach

   2. Representative statements from Stimulated Recall Task

   3. Representative statements from Pupil Concepts of Teaching Task

II. Materials

A. Preparation of Materials (economy, efficiency, physical aspects)'

   1. Representative statements - Teacher Judgment Task

      a. The lattice on the board wasn't straight

      b. She wasted time and effort by making that big chart, then having kids draw right on it.

   2. Representative statements from Stimulated Recall Task

   3. Representative statements from Pupil Concepts of Teaching Task

      a. Had lattice on board to look at - crooked

B. Type of Materials

   1. Representative statements - Teacher Judgment Task

      a. She had a lattice with large numbers on a tag board

      b. The teacher had an arrow she could hold

      c. There were extra visual materials

      d. He had shapes that were correlated to the answers

   2. Representative statements from Stimulated Recall Task

      a. I used the "Mad Libs" because it would relate to the work we'd been doing plus give some humor

      b. I realized there was no plain paper - hadn't even planned for it. So I used scrap

      c. I was concerned about the materials I'd selected. Some children gave the appearance of being disinterested

   d. The picture helped to get them started - a visual thing helps to spark them

3. Representative statements from PUpil Concepts of Teaching Task

   a. Show you movies - it's easier to understand - and gives you more information

   b. Helped by having numbers and dots on board

   c. Numbers were on circles on a board - easier to see

   d. Teacher had paper arrows

C. Teacher Use of Materials

1. Representative statements from Teacher Judgment Task

   a. She wrote right on the lattice

   b. He had a grid on the board and wrote the problems right next to it

2. Representative statements from Stimulated Recall Task

   a. Realized the sign didn't go along with what I'd said, and decided to leave it up

   b. When I read the sentence they had given me, I thought about putting it back in the box and picking another

   c. I decided to rewrite the kernel sentence rather than circling words in order to prevent possible confusion

   d. I hadn't been using the board too much, so I thought I would

3. Representative statements from Pupil Concepts of Teaching Task

   a. Used a paper arrow - and it pointed to the answer on the "board"

   b. Had lattice on board, so they could look plus figure problems out

   c. Didn't write problems down on the board

   d. She used an arrow (paper) so they could see what sideways meant

D. Pupil Use of Materials

1. Representative statements from Teacher Judgment Task
    - a. She let them draw right on the chart
    - b. Each child has one...
    - c. They have pencils and papers and each child can figure it out on his own.

2. Representative statements from Stimulated Recall Task
    - a. I hadn't planned on having the kids writing on the board with this lesson, but it's a good idea in general to have them involved
    - b. I noticed some of them looking around for something to write on, so I gave them those books to use
    - c. I had them put the pencils under the chairs because otherwise they'd be stabbing each other
    - d. If I had had a blackboard, I would have had all the words visible for students to use in writing their sentences

3. Representative statements from Pupil Concepts of Teaching Task
    - a. Would like to draw or play games like Monopoly
    - b. Use workbooks - all together
    - c. Figure out yourself, correct them together
    - d. In spelling, she has you look up the words in the dictionary

E. Other

1. Representative statements from Teacher Judgment Task

2. Representative statements from Stimulated Recall Task

3. Representative statements from Pupil Concepts of Teaching Task

III. Cognitive Aspects

A. Teacher Introduction

1. Representative statements from Teacher Judgment Task

a. There's no introduction at all

b. He just started off

c. I would have given them a bit more information

2. Representative statements from Stimulated Recall Task

a. I had to get the right answer here at the beginning, or nothing would have gotten off the ground

b. I wasn't quite sure how I was going to lead him to using "adverbs" and "adjectives"

c. The opening statement was ad lib, I hadn't thought about it

d. I had dealt with this content yesterday, and I expected the students to get it right away. They didn't, so I had to review

3. Representative statements from Pupil Concepts of Teaching Task

a. Told us what we were going to do

b. Telling us what we were doing

B. Teacher Directions

1. Representative statements from Teacher Judgment Task

2. Representative statements from Stimulated Recall Task

a. I decided to do the directions for all examples at one time. Otherwise would drag too much

b. I'd planned to give examples earlier, realized I hadn't given guidelines, so did it there

c. I told them not to turn their papers over yet, so they'd be concentrating on them all at the same time

3. Representative statements from Pupil Concepts of Teaching Task
    a. He says "come up to my desk anytime you want help"
    b. Didn't tell you how to do things; had you read the directions yourself
    c. Told us to make the sentences longer
    d. Asking them to find a number and put an arrow going up or down

C. Teacher Questioning
1. Representative statements from Teacher Judgment Task
    a. She asked leading questions
2. Representative statements from Stimulated Recall Task
    a. Sometimes you have to simplify things and give more leading questions to get the answers needed
    b. The cross-out left a partial sentence - I asked to see if they'd remembered our lesson on parts of speech
    c. I was concerned to select questions to fit this child
3. Representative statements from Pupil Concepts of Teaching Task
    a. Asking questions like, "would it still be a command?"
    b. Asked what the words in sentences were (nouns, verbs)
    c. Asked us if there was anywhere else to add new words
    d. Saying. "What else?"

D. Teacher Selection of Pupils for Discussion
1. Representative statements from Teacher Judgment Task
2. Representative statements from Stimulated Recall Task
    a. At the beginning of the lesson, I call on kids who will probably get the right answer. Thereby, kids are not distracted by wrong answer
    b. I wanted to call on Diane because she hadn't been saying anything
    c. Time and situation permitting, when they have their hands up, I try to go around and get all the answers

3. Representative statements from Pupil Concepts of Teaching Task
    a. Don't call on you when your hand is up
    b. Letting everybody have a chance
    c. Asking different people questions
    d. Called people's names (better than pointing)

E. Teacher Wait for Response

1. Representative statements from Teacher Judgment Task
    a. He acknowledged hands and waited for pupils to think

2. Representative statements from Stimulated Recall Task
    a. He volunteered, and came to the board, then couldn't remember what to say. I gave him the option of sitting down and coming back later

3. Representative statements from Pupil Concepts of Teaching Task
    a. Called on kids slowly - gave them time to think about it
    b. Waiting for them to figure out problems - giving them a chance

F. Teacher Explanation

1. Representative statements from Teacher Judgment Task
    a. He didn't show them the process
    b. She explained the value of (+ or -) the arrows

2. Representative statements from Stimulated Recall Task
    a. I was trying to communicate about the parts of the simple sentence - wanted them to realize that the simple sentence isn't very descriptive
    b. I had avoided the word "deer" when came up before, but this time I gave an explanation and said I would teach it to students later
    c. I have it established that any time I introduce a word students won't understand, they should interrupt me right then, and I'll explain

3. Representative statements from Pupil Concepts of Teaching Task
    - a. She explains things several times - repeats what she said - adds to written directions
    - b. Shows us how to do math problems - on board
    - c. She tells us the way to do it, or gives us clues
    - d. Explains if you get stuck, but doesn't do all the work for you

G. Teacher Response to Right/Wrong Answers

1. Representative statements from Teacher Judgment Task
    - a. He acknowledged right answers by writing them down
    - b. When an answer was wrong he initialed the problem and went on

2. Representative statements from Stimulated Recall Task
    - a. Donald was confused - I was thinking that he feels self-conscious... that's why I went over and put my hand on his head
    - b. When he gave his sentence, "They never planted beans," I said "What'd they plant, tomatoes?" - personalizing it a bit.
    - c. That student's sentence was clumsy. I didn't like it and wished the student had thought of something else, but I definitely would accept it
    - d. I said "no" because it was definitely the wrong answer and this student has had enough success in the lesson already

3. Representative statements from Pupil Concepts of Teaching Task
    - a. If you miss a problem in math, the teacher gets mad at you and thinks you should know it
    - b. He came back to Peter twice to see if he knew the answer to his problem
    - c. When you miss a word in spelling she goes over the word with the whole class
    - d. You wrote down what we said

H. Teacher Summary and Review of Lesson

1. Representative statements from Teacher Judgment Task

2: Representative statements from Stimulated Recall Task

    a. I didn't want the children to lose what had been learned. Now was the time to tie it together before going on

    b. I didn't have it in my plans to tie it all in

3. Representative statements from Pupil Concepts of Teaching Task

    a. Talked over what we just did

I. Vocabulary (and Spelling)

1. Representative statements from Teacher Judgment Task

    a. He didn't give them the vocabulary, they just pointed instead of saying right and left

    b. There was no directional terminology

2. Representative statements from Stimulated Recall Task

    a. Stacie wanted me to spell "fast" and I refused. I don't spell if it's phonetical

    b. I decided to tell them that it was a "verb"

    c. I used the word "sentence expansion" - that's a correct description of what they did, but they don't know what "sentence expansion " means.

    d. I try to use non-sexist vocabulary

3. Representative statements from Pupil Concepts of Teaching Task

    a. Said "1, straight up" and things like that

    b. Talked a lot - "90 going down"

    c. Said "30 down" - made it easier - (other teacher just wrote it down)

    d. "Put your hand on 30, make an arrow pointing up "

J. Content Focus

1. Representative statements from Teacher Judgment Task
    a. She worked on up arrows and adding
    b. She emphasized more and less, and adding or subtracting 10 and 1
    c. That was a high level lesson dealing with shapes on the lattice

2. Representative statements from Stimulated Recall Task
    a. Wanted them to see you could add lots of description to a noun, but not to a pronoun
    b. I'm not as concerned with grammar here as with sentence expansion
    c. I wanted to focus just on what pupils saw in picture - I didn't want to get off track
    d. I didn't want to get into verbs and tenses so when I drew the card with 2 forms of a verb, I folded the card so children could only see one tense

3. Representative statements from Pupil Concepts of Teaching Task
    a. Teaches us our vowels - short, long, exceptions
    b. Food - what foods are good for you
    c. Learn about dinosaurs and penguins
    d. Didn't do diagonals - might be too hard

K. Data (Selection, Organization, Amount)

1. Representative statements from Teacher Judgment Task
    a. He had so many arrows up and down
    b. He gave too many examples before explaining why
    c. He used mostly up and down arrows, not many sideways or diagonals arrows
    d. He set up a pattern (of problems) then switched the pattern-no rote learning

2. Representative statements from Stimulated Recall Task

   a. I'd originally planned to put a completed sentence on the overhead-changed my mind while they were working, thought they'd get more out of using their own sentences

   b. I wanted to get as many adjectives as possible to open up the sentence

   c. I had to write down parts of speech; the kids were not responding

   d. I was thinking maybe I'd used the wrong sentence. Maybe if I'd put "The ___ man swam____," they'd have seen the adverb at the end

3. Representative statements from Pupil Concepts of Teaching Task

   a. You put the expanded sentences in groups

   b. You made two columns (of sentences)

   c. He picked easy problems so the kids wouldn't make mistakes and make him look bad (on television)

   d. He switched the problems from ↑ ↓ to ↙↗ so they could learn to do it both ways

L. Pacing/Time

1. Representative statements from Teacher Judgment Task

2. Representative statements from Stimulated Recall Task

   a. I was wondering if we were spending too much time on this part

   b. I decided not to do that because of the time involved in putting it on the board

   c. Felt like I was losing control of the group - wanted to move on to next activity

   d. I decided there was not time to deal with run on sentences. I introduced the idea but would not go on

3. Representative statements from Pupil Concepts of Teaching Task

   a. He wrote down the problems fast

M. Pupil Ability

1. Representative statements from Teacher Judgment Task
    a. Learning is hard for those pupils
    b. The pupils were articulate in explaining differences
2. Representative statements from Stimulated Recall Task
    a. Hannah has difficulty with language
    b. One thing interesting about Richard - he can read any word he hasn't seen before, but he can't read a book
3. Representative statements from Pupil Concepts of Teaching Task

N. Pupil Background, Preparation, Needs

1. Representative statements from Teacher Judgment Task
2. Representative statements from Stimulated Recall Task
    a. The children had been having difficulty in writing stories, because they think a sentence has to fit on one line
    b. We've been drilling on nouns, so every time I can emphasize it daily, I do
3. Representative statements from Pupil Concepts of Teaching Task

O. Pupil Ideas

1. Representative statements from Teacher Judgment Task
2. Representative statements from Stimulated Recall Task
    a. I let them change the form of the verb - I thought it was original on their part
    b. He gave the sentence, "Sally acted stupid." I let it go and tried to let them be as creative as they wanted to, as long as they got the point
    c. I realized I could use Ralph's description of "describe," which he had given earlier

    d. They all used my two words as the start for the sentence, and were not adding any words in between

  3. Representative statements from Pupil Concepts of Teaching Task

P. Pupil Learning

  1. Representative statements from Teacher Judgment Task

  2. Representative statements from Stimulated Recall Task

    a. I thought they had the idea of expanding by this point

    b. I felt good. What I wanted to cover, they were really doing it

    c. I saw the children were having trouble with the story character

  3. Representative statements from Pupil Concepts of Teaching Task

    a. Kids knew how to do it now

    b. He got it right

Q. Other

  1. Representative statements from Teacher Judgment Task

    a. There's not much interaction between teacher and pupils

  2. Representative statements from Stimulated Recall Task

  3. Representative statements from Pupil Concepts of Teaching Task

    a. In math, have charts to keep for yourself on how well you did on each page

    b. To get ready for spelling test she had us write the words a number of times, then take them hone and study them

    c. Make books to take home - write your own stories

    d. She says words over if you forget them

IV. Affective Aspects

A. Teacher Enthusiasm

1. Representative statements from Teacher Judgment Task

a. He didn't smile; he seemed bored

b. She was enthusiastic

2. Representative statements from Stimulated Recall Task

3. Representative statements from Pupil Concepts of Teaching Task

a. Laughing, smiling

B. Teacher Attitude Toward Pupils

1. Representative statements from Teacher Judgment Task

a. She was very judgmental; she corrected everything

b. He was very accepting

2. Representative statements from Stimulated Recall Task

a. I know from experience that if I give a smile, it makes rejection easier

3. Representative statements from Pupil Concepts of Teaching Task

a. Sometimes they see the whole thing or listen to the whole story, then they're helpful

C. Teacher Use of Positive Reinforcement

1. Representative statements from Teacher Judgment Task

2. Representative statements from Stimulated Recall Task

a. I thought they needed some kind of a reward, to culminate it

b. I said to Tony, "Great idea - try again." He was stumbling and ready to quit, but through positive reinforcement I got him to keep thinking

   c. I try to respond to almost every comment from students - I want students to know I'm still hearing them

   d. Delynne hurt Kari's feelings, and I had to let her know that I thought what she was doing was fine

3. Representative statements from Pupil Concepts of Teaching Task

   a. When you finish your work, you get a surprise - next day - peanuts, candy

   b. Saying, "Good for you"

   c. Said "Good boy"

D. Teacher Language

1. Representative statements from Teacher Judgment Task

   a. She called it "Frank's favorite number" -- That's great.

2. Representative statements from Stimulated Recall Task

   a. It seemed like he was over there. I said "If you don't want to learn that's one thing, but I'm here to help the others."

3. Representative statements from Pupil Concepts of Teaching Task

E. Pupil Participation /Attention

1. Representative statements from Teacher Judgment Task

   a. The children participated

   b. Two children were not involved by the teacher

   c. The children seemed reluctant to participate

   d. Children were responsive

2. Representative statements from Stimulated Recall Task

   a. They were so enthused. If I had put up the chart, their attention would have been on that, so I waited till I was ready for that part of the lesson

   b. If I don't get to him, will lose him and the rest of group

   c. Alec seemed a bit out of it - I wanted to bring him into the group

3. Representative statements from Pupil Concepts of Teaching Task
    - a. Same 2 or 3 people answering the questions - (6 kids in group)
    - b. Kids weren't looking at board

F. Pupil Behavior

1. Representative statements from Teacher Judgment Task
2. Representative statements from Stimulated Recall Task
    - a. I wasn't sure whether he was really thinking in those terms, or just acting cute, as he's prone to do
    - b. You see - he moves his seat, a kid copies, she's right there to tattle - a lot of interaction like that with this class
    - c. Marti was fussing around, so I decided to use his sentence to bring him back into group
    - d. Several children were giving signs of being disinterested
3. Representative statements from Pupil Concepts of Teaching Task
    - a. Kids raised hands instead of shouting out

G. Pupil Feelings

1. Representative statements from Teacher Judgment Task
2. Representative statements from Stimulated Recall Task
    - a. I had decided not to push her. If she wanted to stay, okay. You can't push this student or she will clam up
    - b. I want Ralph to feel as important as other students
    - c. I didn't want to make a big point of it - it would just make her feel bad
    - d. I really watch it with this group - they're easily discouraged
3. Representative statements from Pupil Concepts of Teaching Task

H. Teacher Image

1. Representative statements from Teacher Judgment Task

2. Representative statements from Stimulated Recall Task

a. I like sitting on the edge of the table - it gives a fairly casual posture

b. I allow myself to be told by children I'm wrong, and I admit it

c. The camera made me self-conscious in my movements

2 3. Representative statements from Pupil Concepts of Teaching Task

I. Other

1. Representative statements from Teacher Judgment Task

a. The teacher is embarrassed in this lesson; he's not acting natural

2. Representative statements from Stimulated Recall Task

3. Representative statements from Pupil Concepts of Teaching Task

a. Get hurt - someone walks us to the office

b. Office - let sisters go home to fix lunch for mother

V. Physical Aspects

A. Pupil Comfort

1. Representative statements from Teacher Judgment Task

2. Representative statements from Stimulated Recall Task

a. That child was not feeling well today. He complained of it at noon

3. Representative statements from Pupil Concepts of Teaching Task

B. Teacher/Pupil Movement

1. Representative statements from Teacher Judgment Task

   a. She had the pupils come right up and participate

2. Representative statements from Stimulated Recall Task

   a. Hadn't planned to have kids go to the board, but they wanted to

   b. I usually move around, checking more, but I was concerned about the time

   c. I decided to have children bring the word strips to the board so they would have some activity

   d. Rather than just having them sit there, I want to get them involved - turn them into actors, physically to act out the sentence

3. Representative statements from Pupil Concepts of Teaching Task

   a. Walking across floor

C. Teacher/Pupil Proximity

1. Representative statements from Teacher Judgment Task

   a. The teacher's at eye level with the kids

   b. The children are too far away

2. Representative statements from Stimulated Recall Task

3. Representative statements from Pupil Concepts of Teaching Task

D. Visual/Auditory

1. Representative statements from Teacher Judgment Task

   a. He has the lattice and problems on the board, visible to the kids; there's one focal point

   b. Children are close to the board for clear vision

2. Representative statements from Stimulated Recall Task
    a. I kind of like a stool - it's up higher - I can see them easier, and they can see me
    b. I changed the volume of my voice, because we were working
3. Representative statements from Pupil Concepts of Teaching Task
    a. Talking - numbers [saying numbers as well as writing them on board]

E. Classroom as a Whole
1. Representative statements from Teacher Judgment Task
    a. that classroom is just too neatsy-cutesy
2. Representative statements from Stimulated Recall Task
3. Representative statements from Pupil Concepts of Teaching Task
    a. Tables and chairs - they're in a classroom

F. Nonverbal Communication
1. Representative statements from Teacher Judgment Task
2. Representative statements from Stimulated Recall Task
    a. I could tell by the looks on their faces - the blankness - they weren't quite sure
    b. I use my hands a lot to describe
3. Representative statements from Pupil Concepts of Teaching Task

G. Other
1. Representative statements from Teacher Judgment Task
2. Representative statements from Stimulated Recall Task
3. Representative statements from Pupil Concepts of Teaching Task
    a. Flags on their pencils - probably with names on so they don't get lost or ripped off

b. No outside noise - no recess

c. Playing with beads

d. Wrote 1 and 2

Part II.

Division of Basic Categories for Pupil/Process Comparison

Division of Basic Categories for Pupil/Process Comparison

Pupil

General Approach

Pupil Activity

Materials

    Pupil use of materials

Cognitive

    Pupil ability
    Pupil background, preparation, needs
    Pupil ideas
    Pupil learning

Affective

    Pupil participation
    Pupil behavior
    Pupil feelings

Process

General Approach

    Sequence of Procedures

Materials

    Teacher Use of materials

Cognitive

    Teacher introduction
    Teacher directions
    Teacher questioning
    Teacher selection of pupils for discussion
    Teacher wait for response
    Teacher explanation
    Teacher response to right/wrong answers
    Teacher summary and review
    Data
    Pacing/time

Affective

    Teacher enthusiasm
    Teacher attitude toward pupils
    Teacher use of positive reinforcement

PART III

DATA SUMMARY SHEETS

LESSON PLAN TASK

DATA SUMMARY SHEET

NAME: ______________________ SUBJECT: ______________________

GRADE: ______________________

Type of Goals (circle one)

Behavioral

Non-behavioral

Not stated

Source of Goals (circle one)

Accepted/Selected

Restated

Developed Original

Teacher-Made Worksheets

Included_____ Not Included______

	GENERAL	SPECIFIC	TOTALS
General Approach			
Materials			
Cognitive			
Affective			
Physical			
TOTALS			

FORMAT	VAGUE	SPECIFIC
Outline		
Narrative		
Script		

	NOTED	NOT NOTED
Expected Student Response		
Alternatives		
Evaluation Procedures		
Use of Pupil Ideas		

PUPIL/PROCESS ______ COGNITIVE/AFFECTIVE ______

LESSON VARIATION TASK

DATA SUMMARY SHEET

A. VARIATIONS: NONE____ MINOR (List) MAJOR (List)

B. EXPECTED DIFFERENCE IN PUPIL RESPONSE: NONE____ LIST THOSE MENTIONED

C. CHANGES IF RETAUGHT: NONE____ LIST THOSE MENTIONED

C. CHANGES IF NO RESTRICTIONS: NONE____ LIST THOSE MENTIONED

LOOKING BACK/LOOKING AHEAD TASK
DATA SUMMARY SHEET

Teacher's Name: ____________________

Change in Plans: ____ None or About same ____ Few ____ Several ____ Don't Know

Types of Changes Mentioned: Considerations

General Approach		
Materials		
Cognitive Aspects		
Affective Aspects		
Physical Aspects		

Follow-up Lesson Planned ____ Yes ____ No

Type of Planning Mentioned (Specify content focus by code category) ____________________

Individual ____________________

Group ________ Both ____________________

Preactive Alternatives Considered: ____ Yes ____ No

	Alternatives	Considerations
General Approach		
Materials		
Cognitive Aspects		
Affective Aspects		
Physical Aspects		

COMMENTS ON UNUSUAL PLANNING CONSIDERATIONS:

APPENDIX B

FORMS

PART - I

TEACHER ORIENTATION FORMS

FAR WEST LABORATORY FOR EDUCATIONAL
RESEARCH AND DEVELOPMENT
1855 FOLSOM ST., SAN FRANCISCO, CALIFORNIA 94103

Instructions to Participating Teachers

You will be teaching this lesson in reading and a lesson in mathematics to a group of twelve of your pupils, who represent a cross-section of achievement levels. Each lesson should be about twenty minutes long, the reading lesson will be videotaped, and the math lesson audiotaped.

We are trying to learn what teachers think about in planning or preparing lessons. As you get ready to teach this lesson, please make readable notes about what you expect to do in the lesson -- notes that would help an observer to understand your lesson more completely. These notes will be collected right after you have taught the second lesson.

After you have completed your planning notes, please turn to the colored sheet included with this packet of materials which contains six questions designed to help you elaborate on the notes you have made. Since written notes are often very sketchy, we have included these questions to give you a chance to comment on your notes in more detail.

The questions may be treated in either of two ways. They were written primarily as a guide to an audiotape "discussion" of your notes, and if you feel comfortable using a tape recorder, you are encouraged to answer the questions as completely as you can on tape. But if you prefer to give written responses instead, please answer the questions on a separate sheet of paper. Do what feels most comfortable to you. If you choose to tape record your answers, keep the tape until after you have planned and taught the second lesson and we will collect it then. If you write out your answers to the questions, please turn these in with the planning notes at the end of each lesson.

All teachers will be teaching the same general content, one lesson in reading and one in math. Attached are some materials which give information about the content of each lesson. The materials describe the general subject-matter of the lesson, they give some practice examples of the kinds of things that might be taught, and they suggest some objectives you might want to use. We emphasize, however, that you may use the materials any way you like and plan the lessons to suit your own pupils and your own teaching style. The materials can be used in many different ways and we encourage you to use them in a way that is most comfortable to you.

TELEPHONE (415) 565-3000

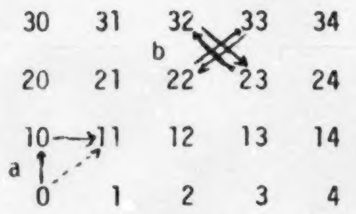
Instructions to Teachers:
Using the Lattice (Mathematical Operations)

In this lesson you will be working with a simple mathematical system known as a lattice. The lattice consists of an arrangement of whole numbers in a way that can be used to perform (and demonstrate) many different kinds of mathematical operations. A lattice of the numbers 0-99, arranged in tens, is shown below.

90	91	92	93	94	95	96	97	98	99
80	81	82	83	84	85	86	87	88	89
70	71	72	73	74	75	76	77	78	79
60	61	62	63	64	65	66	67	68	69
50	51	52	53	54	55	56	57	58	59
40	41	42	43	44	45	46	47	48	49
30	31	32	33	34	35	36	37	38	39
20	21	22	23	24	25	26	27	28	29
10	11	12	13	14	15	16	17	18	19
0	1	2	3	4	5	6	7	8	9

The lattice may include more or fewer numbers than the one shown here, and can be arranged in fives or in other groups as well. Generally we have found the tens grouping to be the clearest and easiest to use, particularly for teachers and pupils not familiar with it. An array of 0-49 seems to be the smallest-sized lattice that still allows enough leeway for experimenting with very different kinds of problems.

The lattice is used to demonstrate the relationships between numbers and the operations performed on them by using arrows which trace a path of moves from one number to another. Thus, in the partial lattice below



the solid arrows in group a show the move from 0 to 10 and from there to 11. The dotted arrow shows the move directly from 0 to 11. An unlimited number of arrows can connect numbers in more and less complicated paths. The important characteristics of the arrows are that a sideways move (right or left one space) produces a change of plus or minus 1, and a vertical move (up or down) produces a change of plus or minus 10. Diagonal arrows (in any of four directions: see group b in the small lattice above) produce a change of plus or minus 11 (10 ↗ = 21; 21 ↙ = 10) or plus or minus 9 (10 ↘ = 1 ; 1 ↖ = 10). Opposite arrows "cancel" each other (10 ↑↓ = 10).

Lattice "problems" are a standard way of explaining how the lattice works, by allowing pupils to work through the operations. There are several kinds of lattice problems. The basic four are illustrated below.

1. One-arrow problems:
   14 → = (15)
   20 ↓ = (10)
   3 ↗ = (14)

2. Two-arrow problems:
   3 → → = (5)
   3 ↑ → = (14)
   16 → ← = (16)

3. Many-arrow problems:
   3 ↑ ↑ ↗ ↘ → → = (27)
   19 ← ← ↑ → → = (29)
   31 ↑ → ↓ ↑ → ↓ → (34)

4. "Missing-arrow" problems:
   a) 15 = 26
   b) 46 = 15
   c) 6 = 8

Some possible answers (there are many) to #4:

a) 15 ↗ = 26; 15 ↑ → = 26; 15 ↑ ↑ ↘ = 26
b) 46 ↙ ↓ ↓ = 15; 46 ↓ ← ↓ ↓ = 15; 46 ↓ ↓ ↓ ← = 16
c) 6 → → = 8; 6 ↗ ↘ = 8; 6 ↑ → → ↓ = 8

These basic problem formats allow for a wide range of mathematical principles and operations to be demonstrated and discovered. Possible objectives of a first lesson on the lattice might include:

1. Pupils will learn to solve one-arrow (two-arrow) problems.
2. Pupils will discover all eight of the one-arrow operations.
3. Pupils will learn that 14 → ↑ = 14↗ (transitivity).
4. Pupils will learn that opposite arrows cancel each other: 41 →← = 41.
5. Pupils will learn that there are many (an infinite number of) ways to get from one number to another.

More complex principles can also be used as the basis of lesson objectives, depending on the teacher's familiarity with the lattice and on children's success with simpler operations on it. These include:

6. Multiple cancelling
    a. the principle that a series of alternating arrows cancel each other when there are an even number of them (3 ↑↓↑↓↑↓ = 3) but do not cancel (and do move one step) when there is an odd number of arrows (3↑↓↑↓↑↓↑ = 13).
    b. the principle that the opposing arrows need not be sequenced in pairs in order to cancel each other. (for example, 32 ↑→←↓ = 32).
7. The system of the lattice (being able to project to points above the top line of numbers and identify what those numbers would be).
8. Identification of numerical meaning of the arrows:
    → = +1; ← = -1; ↑ = +10; ↓ = - 10; ↗ = + 11;
    ↙ = -11; ↖ = +9; ↘ = -9.

You may want to practice making up problems with the lattice and familiarize yourself with the operations that the various arrow patterns describe before trying to teach a lesson. The lattice is not complicated and should be fairly easy to use. Your task in this lesson is to teach your pupils something about the lattice -- we are interested in how different teachers use this material in teaching, so what you teach and how you organize the lesson are completely up to you. Feel free to experiment.

Do not feel that you must try to teach higher-order principles, or that you must teach as much as possible about the lattice. You may want to do so if you feel your pupils can handle it (and you may decide in the middle of the lesson to go further than you had planned), but different approaches to the lattice are appropriate for different grades and ability levels. Use your judgment -- of your pupils' background and of your understanding of the lattice -- in deciding what and how to teach.

Instructions to Teachers:
Reading Comprehension

In this lesson you will be teaching one aspect of reading comprehension, the skills of understanding and constructing expanded sentences. How you teach the principle of expanded sentences is left to your judgment. There is no single preferred approach, and we are interested mainly in seeing how different teachers approach the problem. In the paragraphs below we will describe what is meant by "expanded sentences," suggest some possible objectives for a lesson, and give some examples of how this principle can be communicated to children.

An expanded sentence is one where the meaning of simple subject-verb construction (or of the related interogative) has been changed by adding any one of a number of types of modifiers. Expansions can be made on any sentence, though the simplest illustrations begin with basic noun-verb constructions. The expansions of a sentence can be either further expanded or gradually deleted in order to demonstrate their effect. For example, the sentence "She climbed the tree" may be expanded to "She climbed the big apple tree" or contracted to "She climbed." Both modifications illustrate the effect of expansion.

The expanded-sentences material is drawn from work in the area of structural linguistics, which focuses on "transformation" of sentences, and the ways in which changes in sentence structure affect changes in meaning. We have chosen this material for this teaching session because it is somewhat atypical of the subject-matter covered in the regular curriculum. The principles which can be taught using expanded sentences are useful and helpful to elementary pupils, but the pupils are not responsible for this material in their regular program. You should feel free to use any material and examples that you wish.

Some rules of sentence expansion which may emerge in the course of a lesson include:

1. Adding words to a sentence is one way to change the meaning of a sentence (or, adding more information changes the meaning of a sentence).
2. All sentences can be expanded; no sentence is too long to expand.
3. You can expand (change the meaning of) a sentence by describing each thing in more detail (use of adjectives and adverbs).
4. You can expand (change the meaning of) a sentence by talking about more kinds of actions (additions of verbs).
5. You can expand (change the meaning of) a sentence by saying when (or where) something happened.
6. You can expand (change the meaning of) a sentence by saying what (addition of direct or indirect objects).

You may want to select one or more of the above sample rules to serve as objectives for the lesson. Or you may want to think up some of your own, or combine them somehow. Other kinds of objectives, not referring specifically to rules that pupils would identify, might be that:

7. Pupils can identify the expanded sentences from a list of basic and expanded sentences.
8. Given a set of simple sentences, pupils can expand them in at least one (or two, or three) way(s).
9. Given an expanded sentence, pupils can remove the appropriate word(s) to produce a simple sentence from it.

Different objectives may be appropriate to different groups of pupils depending on grade level and general ability. You should select objectives that you feel comfortable with for your class, and arrange the lesson appropriately.

Some examples of expanded sentences which you might want to use are given below. You may use these and/or others that you may think up; the only real restriction on use is that the vocabulary be appropriate to the grade level of your pupils.

Examples:

a. The snow covers the streets.
The dirty snow covers the streets.
The dirty snow covers the cold dark streets.

b. The birds fly.
The green birds fly.
The big mean green birds fly south today.

c. Shut the door.
Shut the big barn door.
Don't shut the big dirty red barn door.

d. The robin sang.
The red robin sang.
The red robin sang happily yesterday.

e. Her father made a cake.
Her smart father made a giant cake.

f. That turkey ate the candy!
That fat turkey ate the Christmas candy!

g. The monkey ate.
The monkey ate a sandwich.
The big hairy monkey ate a turkey sandwich very fast.

h. The children ran to school.
The small children ran and skipped to school.

i. They planted beans.
They planted green beans.
They happily planted green beans every morning for a week.

j. Danny cooked.
Danny cooked dinner last night.
Danny cooked a big delicious turkey dinner here last night.

These sample sentence expansions suggest the kinds of changes that can be made using the sentence expansion rules. Others should be easy to think up; you might want to ask the pupils to suggest other simple or expanded sentences to work on.

Far West Laboratory
BTES - Study "C"
Teacher Planning

Interview Questionnaire -- Planning for Lessons

(Do not read until after you have written your planning notes).

The questions below are designed to help you be more detailed than you might be in brief written notes. Feel free to be as informal and conversational in your answers as you like.

After you have made written notes on your plans for teaching this lesson, please read the following questions and answer them as clearly and as comfortably as you can, using the audiotape recorder.

1. Go through your written notes and try to amplify a bit on each item -- talk about why it seems important, how often (or rarely) you refer to that kind of thing in normal planning, what it helps you to remember, or anything else that would help us understand what you have written.

2. What steps did you leave out, in writing these notes? That is, what were you thinking between items 1 and 2 (for example) and in getting from each step to the next?

3. Is the planning you did for this lesson similar to the kind of planning you actually do in normal teaching? How is it different?

    - Do you write out lesson plans, or do you usually plan in your head only?

    - Do you plan specifically for each lesson, or do you usually make a general plan for a longer period of a week, a "unit", or a term, for example?

4. If you were responsible for a student teacher (and perhaps you are already), how would you advise him or her to prepare for lessons?

5. Are there some teaching situations where you plan more carefully (or in more detail) than others? What are these? Why?

6. Are there some teaching situations where you feel you need more information for planning and preparation purposes, than others? What are these? How are they different?

PART - II

TEACHER INTERVIEW SCHEDULE

TASK/TIME/EQUIPMENT	PROCEDURE	COMMENTS
DIAGNOSTIC SIMULATION (LONG TERM) 3 hours Data bank Blank 3 x 5 cards Audiotape recorder Writing pads	Written introduction: We are interested in knowing more about how teachers decide to organize their reading program for the year. This task "simulates" the conditions of the opening of school. You have been assigned a new group of pupils for the year. You must decide how to organize your reading program. You have available to you a variety of information on these pupils but you must specify each item or type of information that you want. What do you want to know about these pupils? Write your questions on the 3 X 5 cards you have been given--one question per card. Give the cards to the Data Bank "assistant." She will give you the information you have quested. You can come back later for more information if you wish. You have three hours for this task. At the end of that time you should have completed: 1. a brief description of your reading program, referring to: who will be using what materials; your reasons for these assignments; the general objectives and types of activities for the year; 2. a "thumb-nail sketch" of each student, describing the important things you learned about him or her. In order to simplify this task, there are only 14 students for you to think about. But you should make your plans as if these students are representative, and are only half of the class that you will be teaching. At end of task, ask following questions. (Tape responses)	

TASK/TIME/EQUIPMENT	PROCEDURE	COMMENTS
DIAGNOSTIC SIMULATION (LONG TERM) (CONT'D)	1. This was a simulated task, so we know it was somewhat different from the real planning you do at the beginning of the year. What do you think are the most important differences between what you did here today and what you do normally to prepare for a new class? 2. How would you characterize your reading instruction? Do you work with the whole class, or group, or individualize, or use some combinatin of those? 3. Suppose someone came in to observe your reading lessons this week, and then came back again in two months, what things might they see that would be similar, and what things might be different? 4. What types of reading materials does your school have available? Which of those do you find most useful? Do you use any special materials, that aren't supplied normally by the school?	

TASK/TIME/EQUIPMENT	PROCEDURE	COMMENTS
DIAGNOSTIC SIMULATION	Interviewer introduction	
GROUP DISCUSSION QUESTIONS Audiotape recorder	In our earlier interviews, several teachers mentioned that they had talked with other teachers while planning their lessons, and many teachers commented on their interest in seeing other teachers' approaches to teaching the lattice lesson. We're interested in knowing more about how teachers share information, or learn from each other. The questions we'd like to discuss with you as a group relate to that topic.	
	1. What other teachers or staff members in your district do you talk to or share information or materials with in planning for instruction?	
	2. How often do you have an opportunity to observe other teachers at work? How is this managed at your school? What are the advantages and disadvantages of such observations?	
	3. What do you think are the most important differences between the simulated task you did here today and what you do normally to prepare for a new class? (You've answered this individually. Now let's share our responses.)	
	4. How would you characterize your reading instruction? Do you work with the whole class, or group, or individualize, or use some combination of those? (You answered this question individually, too. We thought you might be interested in seeing how much variety exists in the group.)	
	5. Have you made any changes in teaching reading with this year's class compared to last year's class? Why?	

PART - III

DIAGNOSTIC READING TEST FORMS

READING DIFFICULTIES

Name________________________________ Date____________________

School________________________________ Grades____________________

Child Three: Karen

Her word List:

1. bells
2. goats
3. boat
4. which
5. opens
6. best
7. rat
8. there
9. laughs
10. foot
11. but
12. peach
13. always
14. together
15. scout
16. myself
17. every
18. use

1. What is Karen's reading problem or problems? Be as specific as you can

2. What strategies or approaches would you use to help Karen improve her reading skills?

Child Four: Chris

His word list:

1. draw
2. mile
3. rid
4. rope
5. one
6. core
7. won
8. think
9. throws
10. sunny
11. shop
12. hats
13. found
14. us
15. point
16. before
17. light
18. just

1. Chris' reading problem (or problems) include:
(check all that apply)

_____initial consonant error(s)

_____medial consonant error(s)

_____final consonant error(s)

_____initial vowel error(s)

_____medial vowel error(s)

_____final vowel error(s)

_____reversal error(s)

_____basic sight vocabulary error(s)

_____consonant blend or digraph error(s)

_____vowel digraph or dipthong error(s)

2. Circle Chris' major problem or problems in the list above

Child Five: Andy

His paragraph:

RULES FOR TAKING OUT LIBRARY BOOKS

You cannot take out more than three books at one time. Take the card out of the back of each book you want. Write your name on each card, and leave the cards in the box on the library table. You may keep books from the blue shelves for one week and books from the white shelves for two weeks.

The questions he was asked:

- If Ruth kept a book from the blue shelf for one week, did she obey the library rules? (correct answer - yes)
- What is the best reason for returning books on time? (correct answer - so you will not lose them)
- Which shelf has books you may keep for two weeks? (correct answer - the white shelf)
- How many books may you take out at a time? (correct answer - three)

1. Andy's reading problem (or problems) include:
   (check all that apply)

   ______hesitation

   ______repetition

   ______insertion of word(s) or letter(s)

   ______omission of word(s) or letter(s)

   ______decoding, gross pronunciation or punctuation error(s)

   ______substitution of similarly shaped word(s) with different meaning(s)

   ______substitution of word(s) that sound and look similar and have a similar meaning (or meanings)

   _______interpretation or inference error(s)

   _______Literal meaning extraction error(s)

2. Circle Andy's major problem (or problems) in the list above

Child Eight: Lisa

Her paragraph:

Some nature museums lend animals to children to take home. Some of the animals are wild. The museums lend snakes, opossums, and raccoons. Wild animals like these are taken home in locked cages. Wild animals may be kept one day. Tame animals such as rabbits and kittens may be kept a whole week. Rules come with the pets. The rules tell how to feed, clean, and handle the animals.

The questions she was asked:

- Does the story say that zoos or museums lend animals? (correct answer - museums)
- Would foxes or turtles come in a locked cage? (correct answer - foxes)
- Do rules come with the pets so the animal will get good care or so you will know if an animal is wild or tame? (correct answer - so the animals will get good care)
- May wild animals be kept one day or one week? (correct answer - one day)

1. What is Lisa's reading problem or problems? Be as specific as you can.

2. What strategies or approaches would _you_ use to help Lisa improve her reading skills?

1. Did you prefer using the check list or the open-ended questions in diagnosing these pupil reading problems? Why?

2. What other information (beyond that provided on the videotape) would be necessary or essential for you to have in order to double check the accuracy of your diagnosis of these pupils?

3. What other information (beyond that provided on the videotape) would be useful or helpful for you to have in order to make your instruction of these pupils more effective?

4. How does the information provided here differ from what you would normally collect about children in your reading class?

5. How is it the same?

APPENDIX - C

DATA BANK SAMPLES

Family Background

Name: Jose D.

Date of Birth: 7/6/64

Place of Birth: San Francisco, Ca.

Sex: M

Father: Ramon

Born: Mexico

Occupation: reverend

Education: elementary school

Mother: Angela

Born: Mexico

Occupation: housewife

Education: elementary school

Brothers:
Raymond 11/20/59
Daniel 7/23/62
Roberto 8/11/63

Additional Information:

Spanish spoken in home.

Name: Jose D. Grade: 3

Standardized Test Record

Test and Results: California Mental Maturity
Language IQ - 77
Non-Language IQ - 102
Total IQ - 89

Date: 12/7/72

Age: 8-5

Name: Jose D. Grade: 4

Standardized Test Record

Test and Results: Stanford Achievement

Word Meaning	2.1
Paragraph Meaning	2.3
Spelling	1.4
Word Study Skills	2.0
Language	3.5
Arithmetic Computation	1.9
Arithmetic Concepts	1.9
Science/Social Studies	3.2

Date: 3/74

Age: 9-8

Name: Jose D. Grade: 4

Standardized Test Record

Test and Results

Comprehensive Tests of Basic Skills

	Raw Score	Grade Equivalent
Reading Vocabulary	7	2.1
Reading Comprehension	10	2.3
Reading Total	17	1.9
Language Mechanics	7	3.2
Language Expression	8	3.4
Language - Spelling	2	1.3
Language Total	17	2.1
Arithmetic Computation	3	1.8
Arithmetic Concepts	4	1.8
Arithmetic Applications	3	2.1
Math Total	10	1.6

Date: 5/74

Age: 9-10

Last Name	First	Middle
D.	Jose	

Date of Birth July 6, 1964 (Month / Day / Year)

School ____________________

INDIVIDUAL PUPIL READING RECORD
for
Harper & Row - Macmillan Basic Reading Program

Harper & Row Strand 1 & II	Date Completed
FIRST YEAR	
Off We Go with Stories	12/70
On Our Way to Read	
Janet and Mark	2/71
Outdoors and In	
City Days, City Ways	4/71
Just for Fun	4/71
Preprimer Workbook	
Phonics Workbook for Preprimer and Primer	6/72
Around the Corner Not finished 6/71	6/72
Around the Corner Workbook	
Real and Make-Believe	6/73
Real and Make-Believe Workbook	6/73
Phonics Workbook	
From Elephants to Eskimos	
SECOND YEAR	
All Through the Year	6/74
All Through the Year Workbook	6/74
Phonics Workbook	
From Fins to Feathers	
THIRD YEAR	
From Faraway Places	
From Faraway Places Workbook	
Phonics Workbook	
From Bicycles to Boomerangs	
FOURTH YEAR	
Trade Winds	
Trade Winds Workbook	
From Codes to Captains	
FIFTH YEAR	
Crossroads	
Crossroads Workbook	
From Actors to Astronauts	

Harris-Macmillan	Date Completed
FIRST YEAR	
Worlds of Wonder	
Worlds of Wonder Workbook	
Lands of Pleasure	
Lands of Pleasure Workbook	
SECOND YEAR	
Enchanted Gates	
Enchanted Gates Workbook	
Shining Bridges	
Shining Bridges Workbook	
THIRD YEAR	
Better Than Gold	
Better Than Gold Workbook	
More Than Words	
More Than Words Workbook	
FOURTH YEAR	
The Magic Word	
The Magic Word Workbook	
FIFTH YEAR	
Bold Journeys	
Bold Journeys Workbook	

Bank Street Readers	
FIRST YEAR	
In the City	11/71
People Read	
In the City & People Read Workbook	
Around the City	4/72
Around the City Workbook	4/72
Uptown, Downtown	4/72
Uptown, Downtown Workbook	4/72
SECOND YEAR	
My City	
My City Workbook	
Green Light, Go	
Green Light, Go Workbook	
THIRD YEAR	
City Sidewalks	
City Sidewalks Workbook	
Round the Corner	
Round the Corner Workbook	

Literature	
FIRST YEAR	
Peppermint Fence	
Sky Blue	
SECOND YEAR	
Star Bright	
THIRD YEAR	
Meadow Green	
Here & There Stories	
FOURTH YEAR	
Much Majesty	
Now & Then Stories	
Aesop's Fables	
FIFTH YEAR	
Wider Than the Sky	
Near & Far Stories	

Supplementary	Date Completed
FIRST YEAR	
Sounds of Numbers	
Sounds Around the Clock	
Lippincott Basic Reading	
Preprimer	
Preprimer Workbook	
Primer	
Primer Workbook	
1-1	
1-1 Workbook	
1-2	
1-2 Workbook	
Happy Days in the City	
All Around the City	
Other Books	
SECOND YEAR	
Sounds of Laughter	
Lippincott Basic Reading	
2-1	
2-1 Workbook	
2-2	
2-2 Workbook	
Good Times in the City	
Other Books	
THIRD YEAR	
Sounds of the Storyteller	
Lippincott Basic Reading	
3-1	
3-1 Workbook	
3-2	
3-2 Workbook	
Adventures in the City	
Other Books	
FOURTH YEAR	
Open Highways Book 4	
Open Highways Book 4 Workbook	
Sounds of Mystery	
The Sea Hunt	
The Pearl Divers	
Whale Hunt	
Exploring Lands in the North	
Exploring Forest & Mountains	
Exploring Natural Wonders	
Exploring Along Lakes & Rivers	
Exploring Lands Near the Ocean	
Other Books	
FIFTH YEAR	
Open Highways Book 5	
Open Highways Book 5 Workbook	
Sounds of a Young Hunter	
Mystery of the Marble Angel	
Mystery of the Midnight Visitor	
Mystery of the Myrmidon's Journey	
Exploring Lands in the North	
Exploring Forest & Mountains	
Exploring Natural Wonders	
Exploring Along Lakes & Rivers	
Exploring Lands Near the Ocean	
Other Books	

Report of Parent Conference

Grade: 3

Jose D. L.S.

Jose has a new, young stepmother this year. Neither parent was able to come to school for a conference.

Name: Bob W. Grade: 3

Standardized Test Record

Test and Results: California Mental Maturity
Language IQ - 78
Non-Language IQ - 119
Total IQ - 99

Date: 12/16/72

Age: 8-5

Family Background

Name: Bob W.

Date of Birth: 7/21/64

Place of Birth: Oxnard, Ca.

Sex: M

Father: (foster) William Mason

Born: Virginia

Occupation: clerk

Education: 7th grade

Mother: (foster) Marie Mason

Born: Los Angeles, Ca.

Occupation: housewife

Education: 7th grade

Brothers: (foster) Joseph Mason - 6/17/51 (special class)
Charles Logan - 3/16/63 (foster child)

Sisters: (foster) Marian Mason - 5/28/54
Betty Robinson - 2/29/66 (foster child)

Name: Bob W. Grade: 4

Standardized Test Record

Test and Results: Stanford Achievement
Word Meaning - 3.3
Paragraph Meaning - 3.2
Spelling - 3.3
Word Study Skills - 2.6
Language - 1.4
Arithmetic Computation - 3.6
Arithmetic Concepts - 3.2
Science/Social Studies - 2.9

Name: Bob W.

Grade: 4

Standardized Test Record

Test and Results

Comprehensive Tests of Basic Skills

	Raw Score	Grade Equivalent
Reading Vocabulary	13	3.2
Reading Comprehension	15	3.3
Reading Total	28	3.2
Language Mechanics	2	1.5
Language Expression	5	1.7
Language - Spelling	12	3.3
Language Total	19	2.4
Arithmetic Computation	18	3.6
Arithmetic Concepts	10	3.2
Arithmetic Applications	5	3.0
Math Total	33	3.4

Date: 5/74

Age: 9-10

Last Name W First Bob Middle

Date of Birth July 21, 1964
Month Day Year

School

INDIVIDUAL PUPIL READING RECORD
for
Harper & Row - Macmillan Basic Reading Program

Harper & Row Strand I & II	Date Completed
FIRST YEAR	
Off We Go with Stories	↓
On Our Way to Read	
Janet and Mark	
Outdoors and In	
City Days, City Ways	
Just for Fun	
Preprimer Workbook	4/71
Phonics Workbook for Preprimer and Primer	
Around the Corner	6/71
Around the Corner Workbook	
Real and Make-Believe/	12/71
Real and Make-Believe Workbook	12/71
Phonics Workbook	
From Elephants to Eskimos	
SECOND YEAR	
All Through the Year	6/72
All Through the Year Workbook	6/72
Phonics Workbook	6/72
From Fins to Feathers	
THIRD YEAR	
From Faraway Places	6/73
From Faraway Places Workbook	6/73
Phonics Workbook	6/73
From Bicycles to Boomerangs	
FOURTH YEAR	
Trade Winds	6/74
Trade Winds Workbook	6/74
From Codes to Captains	
FIFTH YEAR	
Crossroads	
Crossroads Workbook	
From Actors to Astronauts	

Harris-Macmillan	Date Completed
FIRST YEAR	
Worlds of Wonder	
Worlds of Wonder Workbook	
Lands of Pleasure	
Lands of Pleasure Workbook	
SECOND YEAR	
Enchanted Gates	
Enchanted Gates Workbook	
Shining Bridges	
Shining Bridges Workbook	
THIRD YEAR	
Better Than Gold	
Better Than Gold Workbook	
More Than Words	
More Than Words Workbook	
FOURTH YEAR	
The Magic Word	
The Magic Word Workbook	
FIFTH YEAR	
Bold Journeys	
Bold Journeys Workbook	
Bank Street Readers	
FIRST YEAR	
In the City	
People Read	
In the City & People Read Workbook	
Around the City	
Around the City Workbook	
Uptown, Downtown	
Uptown, Downtown Workbook	
SECOND YEAR	
My City	
My City Workbook	
Green Light, Go	
Green Light, Go Workbook	
THIRD YEAR	
City Sidewalks	
City Sidewalks Workbook	
Round the Corner	
Round the Corner Workbook	
Literature	
FIRST YEAR	
Peppermint Fence	
Sky Blue	
SECOND YEAR	
Star Bright	
THIRD YEAR	
Meadow Green	
Here & There Stories	
FOURTH YEAR	
Much Majesty	
Now & Then Stories	
Aesop's Fables	
FIFTH YEAR	
Wider Than the Sky	
Near & Far Stories	

Supplementary	Date Completed
FIRST YEAR	
Sounds of Numbers	
Sounds Around the Clock	
Lippincott Basic Reading	
Preprimer	
Preprimer Workbook	
Primer	
Primer Workbook	
1-1	
1-1 Workbook	
1-2	
1-2 Workbook	
Happy Days in the City	
All Around the City	
Other Books	
SECOND YEAR	
Sounds of Laughter	
Lippincott Basic Reading	
2-1	
2-1 Workbook	
2-2	
2-2 Workbook	
Good Times in the City	
Other Books	
THIRD YEAR	
Sounds of the Storyteller	
Lippincott Basic Reading	
3-1	
3-1 Workbook	
3-2	
3-2 Workbook	
Adventures in the City	
Other Books	
FOURTH YEAR	
Open Highways Book 4	
Open Highways Book 4 Workbook	
Sounds of Mystery	
The Sea Hunt	
The Pearl Divers	
Whale Hunt	
Exploring Lands in the North	
Exploring Forest & Mountains	
Exploring Natural Wonders	
Exploring Along Lakes & Rivers	
Exploring Lands Near the Ocean	
Other Books	
FIFTH YEAR	
Open Highways Book 5	
Open Highways Book 5 Workbook	
Sounds of a Young Hunter	
Mystery of the Marble Angel	
Mystery of the Midnight Visitor	
Mystery of the Myrmidon's Journey	
Exploring Lands in the North	
Exploring Forest & Mountains	
Exploring Natural Wonders	
Exploring Along Lakes & Rivers	
Exploring Lands Near the Ocean	
Other Books	

Report of Parent Conference

Bob W. K Feb. 21, 1970 A.P.

Mrs. Mason, Bob's foster mother, is deeply interested in his school progress. She seems to have a genuine affection for Bob, though she is surely kept busy with two children of her own, and three foster children to care for.

Mrs. Mason mentioned Bob's tendency to pout or sulk when he is reprimanded, a trait which has also been evident in school. However, she said he was generally well-behaved at home, and got along well in his large family, with only occasional fights.

Report of Parent Conference

Bob W.	3	Nov. 20, 1972	L.S.

Mrs. Mason is a conscientious foster mother, and has tried to cooperate with the school. Bob's erratic school achievement has not really been improved much, however.

Mrs. Mason agreed to check regularly to make certain that homework assignments are completed. I agreed to make an extra-special effort to give Bob additional help in reading.

Family Background

Name: Ira M.
Date of Birth: 4/18/64
Place of Birth: Inglewood, Ca.
Sex: M

Father: Bernard
Born: Orange, Ca.
Occupation: contractor
Education: college

Mother: Edith
Born: Burbank, Ca.
Occupation: housewife
Education: college

Brothers: Steven 5/9/57

Sisters:

Additional Information:

Name: Ira M. Grade: 3

Standardized Test Record

Test and Results: California Mental Maturity
Language IQ - 102
Non-Language IQ - 98
Total IQ - 100

Date: 12/16/72

Age: 8-8

Name: Ira M. Grade: 4

Standardized Test Record

Test and Results: Stanford Achievement
Word Meaning - 2.2
Paragraph Meaning - 2.6
Spelling - 2.9
Word Study Skills - 2.5
Language - 3.0
Arithmetic Computation - 3.8
Arithmetic Concepts - 3.2
Science/Social Studies - 6.6

Date: 3/74

Age: 9-11

Name: Ira M. Grade: 4

Standardized Test Record

Test and Results

Comprehensive Tests of Basic Skills

	Raw Score	Grade Equivalent
Reading Vocabulary	8	2.3
Reading Comprehension	11	2.5
Reading Total	19	2.2
Language Mechanics	6	2.9
Language Expression	10	3.0
Language - Spelling	9	2.9
Language Total	25	2.9
Arithmetic Computation	20	3.8
Arithmetic Concepts	10	3.2
Arithmetic Applications	5	3.0
Math Total	35	3.5

Date; 5/74

Age: 10-1

Last Name First Middle

M. Ira

Date of Birth April 18, 1964
Month Day Year

School ____________________

INDIVIDUAL PUPIL READING RECORD

for

Harper & Row - Macmillan Basic Reading Program

Harper & Row Strand I & II	Date Completed
FIRST YEAR	
Off We Go with Stories	
On Our Way to Read	
Janet and Mark	1/71
Outdoors and In	
City Days, City Ways	2/71
Just for Fun	
Preprimer Workbook	
Phonics Workbook for Preprimer and Primer	
Around the Corner	6/71
Around the Corner Workbook	6/71
Real and Make-Believe	12/71
Real and Make-Believe Workbook	12/71
Phonics Workbook	12/71
From Elephants to Eskimos	
SECOND YEAR	
All Through the Year	6/72
All Through the Year Workbook	6/72
Phonics Workbook	6/72
From Fins to Feathers	
THIRD YEAR	
From Faraway Places	6/73
From Faraway Places Workbook	6/73
Phonics Workbook	6/73
From Bicycles to Boomerangs	
FOURTH YEAR	
Trade Winds	6/74
Trade Winds Workbook	6/74
From Codes to Captains	
FIFTH YEAR	
Crossroads	
Crossroads Workbook	
From Actors to Astronauts	

Harris-Macmillan	Date Completed
FIRST YEAR	
Worlds of Wonder	12/70
Worlds of Wonder Workbook	12/70
Lands of Pleasure	
Lands of Pleasure Workbook	
SECOND YEAR	
Enchanted Gates	
Enchanted Gates Workbook	
Shining Bridges	
Shining Bridges Workbook	
THIRD YEAR	
Better Than Gold	
Better Than Gold Workbook	
More Than Words	
More Than Words Workbook	
FOURTH YEAR	
The Magic Word	
The Magic Word Workbook	
FIFTH YEAR	
Bold Journeys	
Bold Journeys Workbook	
Bank Street Readers	
FIRST YEAR	
In the City	
People Read	
In the City & People Read Workbook	
Around the City	
Around the City Workbook	
Uptown, Downtown	
Uptown, Downtown Workbook	
SECOND YEAR	
My City	
My City Workbook	
Green Light, Go	
Green Light, Go Workbook	
THIRD YEAR	
City Sidewalks	
City Sidewalks Workbook	
Round the Corner	
Round the Corner Workbook	
Literature	
FIRST YEAR	
Peppermint Fence	
Sky Blue	
SECOND YEAR	
Star Bright	
THIRD YEAR	
Meadow Green	
Here & There Stories	
FOURTH YEAR	
Much Majesty	
Now & Then Stories	
Aesop's Fables	
FIFTH YEAR	
Wider Than the Sky	
Near & Far Stories	

Supplementary	Date Completed
FIRST YEAR	
Sounds of Numbers	
Sounds Around the Clock	
Lippincott Basic Reading	
Preprimer	
Preprimer Workbook	
Primer	
Primer Workbook	
1-1	
1-1 Workbook	
1-2	
1-2 Workbook	
Happy Days in the City	
All Around the City	
Other Books	
SECOND YEAR	
Sounds of Laughter	
Lippincott Basic Reading	
2-1	
2-1 Workbook	
2-2	
2-2 Workbook	
Good Times in the City	
Other Books	
THIRD YEAR	
Sounds of the Storyteller	
Lippincott Basic Reading	
3-1	
3-1 Workbook	
3-2	
3-2 Workbook	
Adventures in the City	
Other Books	
FOURTH YEAR	
Open Highways Book 4	
Open Highways Book 4 Workbook	
Sounds of Mystery	
The Sea Hunt	
The Pearl Divers	
Whale Hunt	
Exploring Lands in the North	
Exploring Forest & Mountains	
Exploring Natural Wonders	
Exploring Along Lakes & Rivers	
Exploring Lands Near the Ocean	
Other Books	
FIFTH YEAR	
Open Highways Book 5	
Open Highways Book 5 Workbook	
Sounds of a Young Hunter	
Mystery of the Marble Angel	
Mystery of the Midnight Visitor	
Mystery of the Myrmidon's Journey	
Exploring Lands in the North	
Exploring Forest & Mountains	
Exploring Natural Wonders	
Exploring Along Lakes & Rivers	
Exploring Lands Near the Ocean	
Other Books	

Report of Parent Conference

Ira M. K April 2, 1970 M.S.

Mrs. M. spent most of the conference time talking about how "guilty" she felt lately because of her intense involvement with her older son's imminent Bar Mitzvah initiation. But at school he has shown no effects of any such attention deprivation. In fact, his days have been much more productive, fun, and involved. Much less dependence on grown-ups and increased involvement with other children who do not use him as a scapegoat as his mother fears.

This over-anxious Mother needs to let Ira grow on his own more and have confidence herself, that he has the potential to become a sturdy, able boy. But she goes on insisting he isn't very resilient, or strong, and ought to have constant adult support.

Report of Parent Conference

Ira M. 3 Nov. 4, 1972 A.S.

Ira has had an excellent year, so far. I structure his every movement; he even sits directly in front of me, and seems to absorb great amounts of solidity just from this proximity. He functions well when he knows what is expected of him, and in a situation where his antics are not allowed to amount to matters of much importance. His new calm is reflected at home, and in both places we adults are breathing sighs of relief. He sees himself as a real schoolboy now, who functions well in spelling and often contributes to math sessions; he no longer feels that he is the butt of jokes among classmates, and can accept himself as a contributing member of this group. Mrs. M hardly believes the compliments she receives from me. "Is this really the truth?" she asks again and again, in an obvious need for reassurance.

Mr. M. had a private conference with me a week ago, in which he spoke calmly and directly about his feelings; I felt that Mrs. M. is usually the middleman in the process, interpreting the school. Both parents now see more clearly that Ira is a child with problems, but that his problems are being looked after by people who know and care.

Mrs. M. would still like to teach Ira phonics at home. She says that when he is faced with spelling a word like WHEN, he says it to her one letter at a time -- always correctly -- and that she merely nods her head to let him know that he is right. It seems to me that this is enough. He is asking for reassurance not for direct assistance from her -- and this is what she needs to give him.

Family Background

Name:	Jane A.
Date of Birth:	8/20/64
Place of Birth:	Los Angeles, Ca.
Sex:	F
Father:	Woodrow Wilson
Born:	San Diego, Calif.
Occupation:	grounds supervisor, L.A. city housing authority
Education:	high school
Mother:	Hisayo
Born:	Tokyo, Japan
Occupation:	part-time piano teacher
Education:	high school
Brothers:	William 8/28/61
Sisters:	

Additional Information:

Parents are bilingual, using both English and Japanese.

Name: Jane A. Grade: 3

Standardized Test Record

Test and Results: California Mental Maturity

Language IQ	99
Non-Language IQ	105
Total IQ	102

Date: 12/16/72

Age: 8-4

Name: Jane A. Grade: 4

Standardized Test Record

Test and Results: Stanford Achievement

Word Meaning	3.7
Paragraph Meaning	3.1
Spelling	3.2
Word Study Skills	2.5
Language	3.5
Arithmetic Computation	4.5
Arithmetic Concepts	2.3
Science/Social Studies	3.5

Date: 3/74

Age: 9-7

Name: Jane A. Grade: 4

Standardized Test Record

Test and Results

Comprehensive Tests of Basic Skills

	Raw Score	Grade Equivalent
Reading Vocabulary	17	3.7
Reading Comprehension	14	3.1
Reading Total	31	3.4
Language Mechanics	9	3.6
Language Expression	12	3.4
Language - Spelling	11	3.2
Language Total	32	3.4
Arithmetic Computation	27	4.5
Arithmetic Concepts	6	2.3
Arithmetic Applications	7	3.8
Math Total	40	3.8

Date: 5/74

Age: 9-9

Last Name First Middle

A. Jane.

Date of Birth August 20, 1964
Month Day Year

School

INDIVIDUAL PUPIL READING RECORD
for
Harper & Row - Macmillan Basic Reading Program

Harper & Row Strand I & II	Date Completed
FIRST YEAR	
Off We Go with Stories	
On Our Way to Read	
Janet and Mark	
Outdoors and In	
City Days, City Ways	
Just for Fun	
Preprimer Workbook	
Phonics Workbook for Preprimer and Primer	
Around the Corner	
Around the Corner Workbook	
Real and Make-Believe	
Real and Make-Believe Workbook	
Phonics Workbook	
From Elephants to Eskimos	
SECOND YEAR	
All Through the Year	
All Through the Year Workbook	
Phonics Workbook	
From Fins to Feathers	
THIRD YEAR	
From Faraway Places	
From Faraway Places Workbook	
Phonics Workbook	
From Bicycles to Boomerangs	
FOURTH YEAR	
Trade Winds	
Trade Winds Workbook	
From Codes to Captains	
FIFTH YEAR	
Crossroads	
Crossroads Workbook	
From Actors to Astronauts	

Harris-Macmillan	Date Completed
FIRST YEA	
Worlds of Wonder	12/70
Worlds of Wonder Workbook	12/70
Lands of Pleasure	6/71
Lands of Pleasure Workbook	6/71
SECOND YEAR	
Enchanted Gates	12/71
Enchanted Gates Workbook	12/71
Shining Bridges	6/72
Shining Bridges Workbook	6/72
THIRD YEAR	
Better Than Gold	12/72
Better Than Gold Workbook	12/72
More Than Words	6/73
More Than Words Workbook	6/73
FOURTH YEAR	
The Magic Word	6/74
The Magic Word Workbook	6/74
FIFTH YEAR	
Bold Journeys	
Bold Journeys Workbook	

Bank Street Readers	Date Completed
FIRST YEAR	
In the City	
People Read	
In the City & People Read Workbook	
Around the City	
Around the City Workbook	
Uptown, Downtown	
Uptown, Downtown Workbook	
SECOND YEAR	
My City	
My City Workbook	
Green Light, Go	
Green Light, Go Workbook	
THIRD YEAR	
City Sidewalks	
City Sidewalks Workbook	
Round the Corner	
Round the Corner Workbook	

Literature	Date Completed
FIRST YEAR	
Peppermint Fence	
Sky Blue	
SECOND YEAR	
Star Bright	
THIRD YEAR	
Meadow Green	
Here & There Stories	
FOURTH YEAR	
Much Majesty	
Now & Then Stories	
Aesop's Fables	
FIFTH YEAR	
Wider Than the Sky	
Near & Far Stories	

Supplementary	Date Completed
FIRST YEAR	
Sounds of Numbers	
Sounds Around the Clock	
Lippincott Basic Reading	
Preprimer	
Preprimer Workbook	
Primer	
Primer Workbook	
1-1	
1-1 Workbook	
1-2	
1-2 Workbook	
Happy Days in the City	
All Around the City	
Other Books	
SECOND YEAR	
Sounds of Laughter	
Lippincott Basic Reading	
2-1	
2-1 Workbook	
2-2	
2-2 Workbook	
Good Times in the City	
Other Books	
THIRD YEAR	
Sounds of the Storyteller	
Lippincott Basic Reading	
3-1	
3-1 Workbook	
3-2	
3-2 Workbook	
Adventures in the City	
Other Books	
FOURTH YEAR	
Open Highways Book 4	
Open Highways Book 4 Workbook	
Sounds of Mystery	6/74
The Sea Hunt	
The Pearl Divers	
Whale Hunt	
Exploring Lands in the North	
Exploring Forest & Mountains	
Exploring Natural Wonders	
Exploring Along Lakes & Rivers	
Exploring Lands Near the Ocean	
Other Books	
FIFTH YEAR	
Open Highways Book 5	
Open Highways Book 5 Workbook	
Sounds of a Young Hunter	
Mystery of the Marble Angel	
Mystery of the Midnight Visitor	
Mystery of the Myrmidon's Journey	
Exploring Lands in the North	
Exploring Forest & Mountains	
Exploring Natural Wonders	
Exploring Along Lakes & Rivers	
Exploring Lands Near the Ocean	
Other Books	

C-27

Report of Parent Conference

Jane A. K May 24, 1970 M.S.

Parent Interviewed: Mother

Jane has been ostracized from the girl-clique's activities and has developed personal defensive mannerisms whenever these girls make her feel self-conscious. But she has developed friendships and skills in other directions to compensate, and apparently successfully enough to feel happy at school, or so her mother reports.

Jane has an ear and eye constantly geared to everybody's movement and activity in the room, thus her involvement in activity is never very deep or long. She skips about restlessly, still finding it hard to sit still in the circle for a discussion, story, or transition period. She uses the bathroom as her excuse to leave the circle.

She has lost interest in the reading. She brought At the Lake to school once and tried to read, but it wasn't actual reading - more memory, I'd say.

Her physical appearance is better now - her face has cleared up now, and is not so dry and chapped. She continues to be self-conscious and very conscientious, but in general seems happier and has certainly made some good friends.

Report of Parent Conference

Jane A. 3 November 1, 1972 A.S.

Parent Interviewed: Mother

Mrs. A sees Jane in much the same light as we do at school. Jane has a long record of discomfort and even disfigurement - she was in such agonies with a rash from her birth until she was well past three - so that it is no wonder that she seems to us nowadays like a slow-waking child. Once so swollen with this skin condition that her features were almost inhuman, she now looks bland and rather pretty - and it has taken her some time to reassure herself that this is really true. She is not insensitive to her own problems, and knows that she has been a slow reader, and is sometimes very slow to understand new mathematical principles. Mrs. A. says that Jane has begun to compare her skills with other children's, in a somewhat competitive way: "I can do that quicker than she can" or "She's such a slow runner." It is my feeling that she makes these comments to remind herself that in several areas, she is not a slow child; perhaps she needs to verbalize her accomplishments in order to accept her liabilities more gracefully. As for the reading problem, she is getting special help.

Though spelling is still a mystery to Jane, she is determined to please me by doing her Homework well, and even by doing extra assignments. Mrs. A. syas that often Jane slaves at writing, re-copying and inventing ideas while Billy is doing his Homework - and that she is willing to spend as much time on it as he does on his more complicated assignments! Her internal push toward doing her job is so great that, if the only ingredient needed to help her along is application, Jane is on the road to real accomplishment.

Having Billy, who is as smart as a whip and as popular as anyone could wish, for a brother, offers other problems to this plodding little girl. She sees his endless stream of friends and wonders if she oughtn't to be having a bigger social calendar. On the other hand, Jane is popular with her brother's pals, and is regularly included in their gatherings when they visit; she is generally popular with people, though not successful enough within her own group to please herself.

Judo and piano lessons occupy two of Jane's afternoons, so there isn't too much time for socializing, anyway; when she is by herself, she does on sewing, knitting, and constructing things out of paper.

Our best bet at present seems to be to let Jane feel comfortable; she is sufficiently pressured within herself to keep progress going, and she is too easily threatened by extra pressure to benefit by experiments in that direction! She loves school, and feels that she is doing well - which she is. While anger sometimes shows through her impassive or sweetly docile expression, there is no reason now to believe that school is offering undue problems for Jane, whether socially or intellectually. We shall keep assuring her of her own worth, maintain a supporting but stimulating atmosphere about her, and watch to see signs that will indicate easier progress in the future.

Morine, Greta and Vallance, Elizabeth. Special Study C: A study of teacher planning. San Francisco, California: Technical Report 76-3-1, Beginning Teacher Evaluation Study, Far West Laboratory for Educational Research and Development, 1976. (150 pages plus appendices)

Twenty more and twenty less effective teachers were studied to determine if they differed in the ways they plan for instruction. The effectiveness of the teachers was determined by their ability to affect gains in reading mathematics over two weeks of instruction with a specially designed curriculum unit. Four variables were noted as distinguishing between the planning of the more and less effective teachers. These were: a) whether the teacher used specific or general information in planning; b) whether the teacher believed students had the potential to learn the material; c) whether the teacher considered the cognitive aspects of instruction; and d) whether the teacher produced much of their own instructional materials.